# EXCAVATIONS *IN* TAMILNADU

## *AN ARCHAEOLOGICAL REPORT*


*Dr. T. S. Sridhar,* I.A.S.

Principal Secretary, Commissioner of Archaeology &
Commissioner of Museums,
Government of Tamilnadu.


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**S.S. JAWAHAR,** I.A.S.,

The Principal Secretary and Commissioner of Museums,
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**K.S. SRIPATHI,** I.A.S.,
CHIEF SECRETARY

SECRETARIAT,
CHENNAI-600 009.

## FOREWORD

I am happy to write foreword for the book titled **"EXCAVATIONS IN TAMIL NADU - AN ARCHAEOLOGICAL REPORT"** authored by Dr. T.S. Sridhar, IAS, Principal Secretary and Commissioner of Archaeology and Museums. The book was the outcome of the prestigious **Sir S. SUBRAMANYA AYYAR ENDOWMENT LECTURE**, delivered by him at Department of Ancient History and Archaeology, Madras University in its One Hundred and Fiftieth celebration year, on 09-11-2005.

Archaeology is a science that deals with the past. It is essentially a method of reconstructing the past from the surviving traces of former societies. It is a continuous search for the existence of man and the artifacts, tools, his life style and food habits. It provides another method of approach to history by studying the human cultures through the material remains.

The history of Tamil Nadu can be traced from the Pre-historic period to historic period. This tremendous breakthrough in the field of Pre-historic archaeology pushed back the antiquity of man in Tamil Nadu to more than half a million years. Subsequently, various sites were explored and excavated by different agencies in Tamil Nadu. The Archaeological Survey of India, Tamil Nadu State Department of Archaeology, Madras University, Tamil University, Thanjavur and other organizations were actively involved in bringing to lime light the historical importance of Tamil Nadu through excavations.

All the Departments put together have carried out 132 excavations at historically important sites from inception. Tamil Nadu State Department of Archaeology has so far excavated 33 sites and unearthed various artifacts. Some of the sites have yielded objects of great historical value confirming the

Phone: 25671555 Fax: 25677128, 25672304

location of the ancient capitals, trade centres and their relationship between South India and North India and between ancient Tamil Nadu and Rome. Some of the excavated sites have also been converted into site museums and the antiquities collected in the excavations are displayed there.

Dr. T.S. Sridhar, IAS, has exclusively dealt with the excavations carried out by various agencies in Tamil Nadu and presented their outcomes with photographs for the benefit of students in the field of Archaeology, scholars and others those who show interest in archaeological studies. From the book, one can find out how the excavations were carried out in Tamil Nadu revealing the cultural sequence and contemporary nature of the objects recovered. The book helps us to unknot the mysteries of the past through which one can draw lessons for the future. He has also given some suggestions and recommendations for further research in the field of archaeology. This shows that he is not only an able administrator but also a scholar with keen interest in the field of Archaeology.

This is a rare honour bestowed on a Civil servant, for which Dr. T.S. Sridhar, IAS, deserves full credit. He himself has confessed that the subject Archaeology and History are of abiding interest to him and he has tried to do justice to the topic within the constraints of time and resources available to him. I wish him every success in his endeavours.

(K.S. SRIPATHI)

**Dr. T.S. Sridhar**, I.A.S.,
Principal Secretary/
Commissioner of Museums,
Government Museum,
Egmore, Chennai - 600 008.

Telephone : 044 - 2819 3778
Fax : 044 - 2819 3035

As the Commissioner of Archaeology during the years 2004-06, I was invited by the University of Madras to deliver the prestigious SIR S. SUBRAMANYA AYYAR ENDOWMENT LECTURE, on 09.11.2005 in the one hundred and fiftieth anniversary year of Madras University. I must confess that this is a rare honour bestowed on a civil servant who is not a practising Archaeologist. Nevertheless, I am one among those who are interested in understanding the glorious heritage of our ancient country. Therefore, I took the opportunity to acquaint myself with the topic "*The Archaeology of Tamil Nadu as Revealed from Excavations*" which has not been adequately and comprehensively dealt with so far. I am thankful to Dr. A. Ekambaranathan, Professor and Head of the Department of Ancient History and Archaeology, University of Madras, Chennai for giving me this opportunity. I delivered the lecture to a knowledgeable audience comprising academicians, archaeologists and research scholars. The lecture was well received; many of them requested me to publish the talk for the benefit of a larger audience. Accordingly the talk was published as volume No. 178 in the year 2006 as a Department of Archaeology Publication.

However, only limited number of copies were printed and distributed to well wishers and officials. There has been a persistent request to bring out a more complete volume covering further excavations carried out by different agencies in the state of Tamil Nadu. As Principal Secretary and Commissioner of Archaeology and Museums, the opportunity to include later works arose. Accordingly, this new version is brought out with up-dation and photographs covering the various periods of excavation. The subject Archaeology and History are of abiding interest and I have tried to do justice to the topic within the constraints of time and resources available to me. I hope this monograph will serve a handy purpose for archeologists, researchers and general public who are interested in the subject.

I have covered in my presentation, the whole gamut of archaeology of Tamil Nadu by drawing heavily upon the works of my predecessors, Dr. R. Nagaswamy and Thiru Natana Kasinathan, to whom I am indebted. I also wish to acknowledge the useful hints provided by my team of Archaeologists Mr. K. Sridaran, Dr. N. Marxia Gandhi, Dr. S.Vasanthi, Mr. D. Thulasiraman, Mr.S.Selvaraj, Dr.T. Subramanian, Tmt.B.Valarmathi, PA to Commissioner and Mr. M.T. Sridharan, Photographer. This publication has been made possible by the grant provided by Ministry of Culture, Government of India, and the Government of Tamil Nadu to the Museums Department. I wish to acknowledge the efforts of Thiru. R.Sivanantham,

Epigraphist and Thiru. K.Sekar, Curator for compiling this publication. I also wish to place on record the financial support received from the Government of Tamil Nadu and the Archaeological Survey of India for according permission to conduct excavations over the years.

Chennai,
23-2-2009.

Principal Secretary and
Commissioner of Museums.

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# I. INTRODUCTION

Most human beings have some interest in the past and are always curious about the traces left by their predecessors. To the common man Archaeology tends to be identified with digging. The Greek word *Archaios* means ancient while *logos* refers to its feature i.e., Science. It studies the story of man's past through his material remains; it helps to understand culture, know history and preserve *heritage*, and it contributes immensely to tourism. Archaeology presents another method of approach to history; it is a study of human cultures through the material remains. Even for the period for which written records are available, archaeology provides useful supplementary evidence and serves to fill in the gaps. The earliest known archaeologist was Nabonidus, king of Babylon, who in the sixth century BCE excavated a temple floor down to its foundation stone laid thousands of years ago.

Archaeology is a continuous search, nay a discovery; it is an endless journey, everything is tentative, not final. Archaeology as we have known always relies heavily on the tools left behind by our forefathers and the human progress is based on technological development. It is true that tools were the basis for human existence and modern computers are the devices evolved from the simple stone, wheel and other artefacts invented by our ancestors. Archaeological excavations are no longer a treasure hunt but a search for information and a means of answering specific questions. Archaeologists are responsible for classifying and interpreting the artefacts of ancient societies with the evolution of mankind.

Archaeology, as a discipline has developed into several dimensions and can be broadly divided into Pre-Historic Archaeology and Historic Archaeology. Due to recent development in the study of Archaeology, the ecological changes have also been brought under consideration; separate focus is now given to the study of environmental archaeology and Ethno Archaeology which deals with the study of living peoples and their material culture. Archaeology includes not only excavation but also study of original source materials such as literature, epigraphs, coins and monuments. However, the role of excavation plays a pre eminent part in identifying the existence of man in the remote past. The ancient civilizations such as

Mesopotamia, Egypt, Maya and the civilizations of the east like Chinese civilization, were all exposed through excavations. The excavations at Indus valley and Saraswathi valley culture pushed back the antiquity of Indian history to 3000 BCE. In India, the excavations carried out in the respective sites uncovered the Palaeolithic, Neolithic, Chalcolithic and Iron Age settlements Though the history of Tamil Nadu can be traced from Pre historic period with the discovery of stone tools as accidental findings, it was the proper and systematic excavation in various sites by different agencies that raised the curtain for understanding the past.

When we talk about Archaeology, it is our duty to remember the great pioneers at this juncture, especially in the excavations area. The work done by both Foreign and Indian Archaeologists, who toiled in this field are to be recorded and recognized. The father of Indian Archaeology, Alexander Cunningham, Robert Bruce Foote, Lord Curzon, Sir John Marshall, Sir Mortimer Wheeler and other Indian scholars have done significant work in the field of excavation. The Archaeological Survey of India as the central body regulates the various activities in the field of Archaeology while at the state level, the State Government Archaeology department, Universities and other private organizations carry out excavations in their respective domain.

In Tamil Nadu, the Archaeological Survey of India, Southern circle, State Department of Archaeology, University of Madras, Tamil University, Thanjavur, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya (Deemed University) Enathur, Kanchipuram, Kerala University and Sharma Centre for Education, Pune have undertaken excavations over the years and contributed significantly to reveal the Archaeology of Tamil Nadu.

The State Department of Archaeology was started in the year 1961 with the prime intention of conservation and preservation of ancient monuments in Tamil Nadu and to conduct excavations at historical sites Later on, its activities were expanded to copying and deciphering of stone inscriptions, and publishing them; The excavated antiquities are displayed in the 14 site museums, chemical preservation of art objects and Registration of antiquities etc. Tamil Nadu stands first in the country in issuing registration certificates.

The excavations are conducted at historically important sites, identified with the help of Archaeological source through exploration by the department. It has so far excavated 33 sites and unearthed various artefacts of different periods. Some of the excavated sites have been converted into site museums. The excavations carried out at Tiruttangal, Mangudi, Modur, Kovalanpottal, Anamalai, Pallavamedu, Boluvampatti, Panayakulam, Kurumbanmedu, Kannanur, Alangankulam and Perur are some of the important sites dating back from pre-historic to that of Historic period. These sites have yielded excellent artefacts confirming the location of the ancient capitals, trade centres and their relationship between South India and North India and between Tamil Nadu and the Roman Empire.

In keeping with the two fold categorization of Archaeology into Pre historic and Historic, I propose to split my book into two parts, each half dwelling on the topic listed for detailed examination. This is a maiden attempt to bring the comprehensive record of so far excavated sites in Tamil Nadu and their results into a composite structure. In each cultural period one major excavation established the ground rules in terms of cultural sequence, artefacts and other associated findings. Subsequent excavations have not only confirmed the results of the earlier findings but also substantiated and supported the out comes of the major excavations. For example, the excavation at Arikamedu established the contacts between the Roman kingdom and South India, which was corroborated by evidences *found* at Alagankulam. Most of the exploration and excavations have been done in the second half of the 20$^{th}$ century. They are many, numbering more than 120 and are spread over the entire length and breadth of Tamil Nadu. In the first Part, I shall give an introduction to Geology of Tamil Nadu. There after I propose to take up period wise classification of excavations beginning from the Palaeolithic and move on to Microlithic and Neolithic Ages and end with the Iron Age or Megalithic period. In the second half, I shall cover the Historic period comprising the various kingdoms in Post-Sangam Era, the medieval age and conclude with excavations done during modern times. The excavations in Tamil Nadu disclose the cultural heritage of the Tamils in their varied aspects. They help us to unravel the mysteries of the past, and there from draw lessons for the future. Some suggestions are also made for further research.

## II. LIST OF ARCHAEOLOGICAL EXCAVATIONS (INSTITUTION – WISE)

Excavations have been conducted over considerable length of time starting from 1863 onwards. They cover a wide range of periods from the Palaeolithic to the modern era traversing diverse periods such as Microlithic, Neolithic, Megalithic, Historic, Medieval and Modern. Some of the sites are chance finds, explorations, and trial excavations. A total of 132 excavations have been carried out so far by agencies such as Archaeological Survey of India, Tamil Nadu State Department of Archaeology, Ancient History and Archaeology Department, University of Madras, Tamil University, Thanjavur, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya (Deemed University) Enathur, Kanchipuram and a few other agencies. For the benefit of the readers, names of the Excavated places are mentioned in the list below along with the nature of site and year of excavation.

### a. Archaeological Survey of India-72 Sites

| Sl.No. | Excavated site | District | Year | Nature of the site |
|---|---|---|---|---|
| 1. | Pallavaram | Chennai | 1863 | Palaeolithic |
| 2. | Gudiyam | -do- | 1962-63 | Palaeolithic |
| 3. | Attirambakkam | Tiruvallur | 1964-65 | Palaeolithic |
| 4. | Neyveli | -do- | 1963-64 | Palaeolithic |
| 5. | Poondi | -do- | 1965-66 | Palaeolithic |
| 6. | Vadamadurai | -do- | 1966-67 | Palaeolithic |
| 7. | T.Kallupatti | Madurai | 1976-77 | Microlithic & Megalithic |
| 8. | Dailamalai | Dharmapuri | | Neolithic & Megalithic |
| 9. | Togarapalli | Krishnagiri | | Neolithic |
| 10. | Paiyampalli | Vellore | 1964-65<br>1967-68 | Neolithic Megalithic |
| 11. | Mullikadu | Dharmapuri | | Neolithic |
| 12 | Odukattur | Vellore | 1916 | Megalithic |
| 13. | Kambarmedu | Thanjavur | 1982-83 | Megalithic |
| 14 | Perumbair | Kanchipuram | 1908 | Megalithic |

| Sl.No. | Excavated site | District | Year | Nature of the site |
|---|---|---|---|---|
| 15. | Melsathamangalam | Pondicherry | 1983 | Megalithic/Histor c |
| 16. | Amirthamangalam | Tiruvallur | 1944 49 | Megalithic |
| 17. | Anuppanadi | Madurai | 1887 | Megalithic |
| 18. | Auroville | Pondicherry | 1984-85<br>1985-86 | Megalithic |
| 19. | Kadamalai Puthur | Kanchipuram | | Megalithic |
| 20. | Kadaya Nallur | Tirunelveli | 1935-36 | Megalithic |
| 21. | Kaliyappatti | Pudukottai | 1937 | Megalithic |
| 22. | Kalakudipatti | Pudukottai | 1937-38 | Megalithic |
| 23 | Kanara Palayam | Coimbatore | | Megalithic |
| 24. | Kaniam Poondi | Coimbatore | | Megalithic |
| 25. | Keelnatham | Tirunelveli | 1903-04 | Megalithic |
| 26. | Korimedu | Pondicherry | | Megalithic |
| 27. | Kollur | Villupuram | | Megalithic |
| 28. | Sanur | Kanchipuram | 1950-52 | Megalithic |
| 29. | Sittannavasal | Pudukottai | 1934-35<br>1975-76 | Megalithic |
| 30 | Nilayapatti<br>Mottaimalai | Pudukottai<br>-do- | | Mega ithic |
| 31. | Aranipatti<br>Surandapatti<br>Tachchanpatti | -do-<br>-do-<br>-do- | 1934-35 | Megalithic |
| 32. | Sadayaparai | Pudukottai | 1917 | Megalithic |
| 33. | Sirumugai | Coimbatore | | Megalithic |
| 34. | Sulur | Coimbatore | | Megalithic |
| 35 | Settipalayam | Co mbatore | | Megalithic |
| 36. | Sothukeni | Pondicherry | | Megalith c |
| 37. | Nathamedu | Pondicherry | | Megalithic |
| 38 | Nallampatti | Erode | | Megal.thic |
| 39. | Nattukal Palayam | Madurai | | Megalithic |
| 40. | Nicham Palayam | Erode | | Megalithic |
| 41. | Tadampatti | Madurai | | Megal thic |
| 42. | Tirukattalai | Pudukottai | 1917 | Megal thic |
| 43. | Tiruthu | Tirunelveli | 1903-04 | Megalithic |
| 44. | Tiruppur | Pudukottai | 1934-35<br>1938-39 | Megalithic |
| 45. | Tuvara man | Madurai | 1887 | Megalithic |
| 46 | Tudaiyur | Pudukkotta | 1917 | Megalithic |
| 47. | Palani | Dindugal | | Megalithic |
| 48. | Paravai | Madurai | | Megalithic |
| 49. | Pulvayal | Pudukottai | 1917 | Megalithic |
| 50 | Perumalmalai | Dindugal | | Megalithic |

| Sl.No. | Excavated site | District | Year | Nature of the site |
|---|---|---|---|---|
| 51 | Perur | Coimbatore | 1970-71 | Megalithic |
| 52. | Malaiyampattu | Vellore | 1970-71 | Megalithic |
| 53. | Muthrapalayam | Pondicherry | | Megalithic |
| 54 | Mottur | Dharmapuri | 1978-79 | Megalithic |
| 55. | Varikal | Villupuram | | Megalithic |
| 56. | Adichanallur | Tirunelveli | 1876<br>1899-1906<br>1903-04,1914<br>2003-2004<br>2004-2005 | Megalithic |
| 57 | Kunnattur | Kanchipuram | 1955-58 | Megalithic |
| 58 | Kaveripattinam | Nagapattinam | 1962-67<br>1970-71<br>1972-73 | Early Historic |
| 59. | Arikkamedu | Pondicherry | 1941<br>1945<br>1989-92 | Early Histroric |
| 60 | Kanchipuram | Kanchipuram | 1953<br>1962-63<br>1970-71<br>1977 | Medieval |
| 61. | Karaikadu | Cuddalore | 1966-67 | Early Historic |
| 62. | Sengamedu | Villupuram | 1952-53 | Early Historic |
| 63 | Ukkirankottai | Tirunelveli | | Early Historic |
| 64. | Dharasuram | Thanjavur | 1986 | Medieval |
| 65 | Nanganallur | Chennai | 1973-74 | Medieval |
| 66. | Palayakayal | Tuticorin | | Early Historic |
| 67. | Samayapuram | Trichy | 1904-05 | Medieval |
| 68. | Mamallapuram | Kanchipuram | 1990-1991<br>1999-2000<br>2000-2001 | Medieval |
| 69. | Saluvankuppam | Kanchipuram | 2004-2005 | Medieval |
| 70 | Gingee | Villupuram | 2001-2002<br>2002-2003 | Late Medieval |
| 71. | Sadras | Kanchipuram | 2002-2003 | Modern |
| 72. | Sirucheri | Kanchipuram | 2007-2008 | Megalithic |

**b. Archaeological Excavations Conducted By the State Department of Archaeology – 33 Sites**

| Sl.No. | Excavated site | District | Year | Nature of the site |
|---|---|---|---|---|
| 1 | Parikulam | Tiruvallur | 2005- 2006 | Palaeolithic |
| 2 | Mangudi | Tirunelveli | 2001-2002 | Microlithic |
| 3 | Tiruthangal | Virudhunagar | 1994-1995 | Microlithic |
| 4 | Modur | Dharmapuri | 2004-05 | Neolithic |
| 5. | Anaimalai | Coimbatore | 1969 | Megalithic |
| 6. | Kovalanpottal | Madurai | 1980 | Megalithic |
| 7. | Kodumanal | Erode | 1992-1993<br>1996-1997 | Megalithic & Historic |
| 8 | Nedunkur | Karur | 2006-2007 | Megalithic |
| 9. | SembiyanKandiyur | Nagapattinam | 2007-2008 | Megalithic |
| 10 | Karur | Karur | 1973-1979<br>1995-1996 | Historic |
| 11 | Thondi | Ramanathapuram | 1980 | Early Historic |
| 12. | Panayakulam | Dharmapuri | 1979-1980 | Early Historic |
| 13 | Vasavasamudram | Kanchipuram | 1969-1970 | Early Historic |
| 14. | Alagankulam | Ramanathapuram | 1986-1987<br>1990-1991<br>1992-1993<br>1994-1995<br>1996-1997<br>1997-1998 | Early Historic |
| 15 | Korkai | Tuticorin | 1968-1969 | Early Historic |
| 16 | Tirukkoilur | Villupuram | 1992-1993 | Early Historic |
| 17. | Terirruveli | Ramanathapuram | 1999-2000 | Early Historic |
| 18. | Poompuhar | Nagapattinam | 1994-95<br>1997-1998 | Early Historic |
| 19. | Maligaimedu | Cuddalore | 1999-2000 | Early Historic |
| 20. | Perur | Coimbatore | 2001-02 | Early Historic |
| 21. | Andipatti | Tiruvannamalai | 2004-05 | Early Historic |
| 22. | Mangulam | Madurai | 2006- 2007 | Early Historic |
| 23. | Pallavamedu | Kanchipuram | 1970-1971 | Medieval |
| 24. | Boluvampatti | Coimbatore | 1979-1980<br>1980-1981 | Medieval |
| 25. | Kurumbanmedu | Thanjavur | 1984 | Medieval |
| 26. | Gangaikondacholapuam | Ariyalur | 1980-1981<br>1986-1987<br>2008-2009 | Medieval |
| 27 | Palayarai | Thanjavur | 1984 | Medieval |
| 28. | Kannanur | Tiruchirappalli | 1982-1983<br>1983-1984 | Medieval |
| 29 | Padavedu | Tiruvannamalai | 1992-1993 | Medieval |
| 30. | Sendamangalam | Villupuram | 1992-1993<br>1994-1995 | Medievel |
| 31. | Marakkanam | Villupuram | 2005-2006 | Medieval |
| 32 | Panchalankurichi | Tirunelveli | 1968-1969 | Modern |
| 33. | Tranquebar | Nagapattinam | 2008 | Modern |

**c. Ancient History and Archaeology Department , University of Madras - 17 Sites**

| Sl.No. | Excavated site | District | Year | Nature of the site |
|---|---|---|---|---|
| 1. | Mallappadi | Dharmapuri | 1981-82 | Neolithic/Megalithic |
| 2. | Guntur | Dharmapuri | 1983 | Neolithic/Megalithic |
| 3. | Appukallu | Vellore | 1977 | Megalithic |
| 4 | Kaliierimalai | Vellore | 1979 | Megalithic |
| 5. | Tiruvakkarai | Villupuram | 1985 | Megalithic |
| 6. | Tirukampuliyur | Karur | 1961-62 | Early Historic |
| 7 | Alagarai | Tiruchirappalli | 1964 | Early Historic |
| 8. | Uraiyur | Tiruchirappalli | 1965-69 | Early Historic |
| 9. | Kanchipuram | Kanchipuram | 1970-76 | Early Historic |
| 10 | Adiyamankottai | Dharmapuri | 1981-82 | Early Historic |
| 11 | Tiruvamattur | Villupuram | 1987 | Early Historic |
| 12 | Kudikadu | Cuddalore | 1989 | Early Historic |
| 13. | Arikkamedu | Pondicherry | 1991-93 | Early Historic |
| 14 | Tiruverkadu | Tiruvallur | 1996-2000 | Early Historic |
| 15. | Palur | Kanchipuram | 2001-2005 | Early Historic |
| 16. | Melsithamur | Villupuram | 2007-2008<br>2008-2009 | Early Historic |
| 17 | Padavedu<br>[in association with<br>State Dept. of Archaeology] | Tiruvannamalai | 1994 | Medieval |

**d. Tamil University, Thanjavur-5 Sites**

| Sl.No. | Excavated site | District | Year | Nature of the site |
|---|---|---|---|---|
| 1. | Mayiladumparai | Krishnagiri | 2003 | Microlithic/Neolithic/<br>Megalithic |
| 2. | Kodumanal | Erode | 1985-86<br>1989-90<br>1997 | Megalithic/Historic |
| 3. | Thandikudi | Dindugal | 2004 | Megalithic |
| 4. | Vallam | Thanjavur | 1984 | Early Historic |
| 5 | Periyapattinam | Ramanathapuram | 1987 | Medieval (Chinese contact) |

**e. Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya (Deemed University) Enathur, Kanchipuram**

| | | | | |
|---|---|---|---|---|
| 1. | Enathur | Kanchipuram | 1999-2000 | Early Historic |
| 2. | Buddha Agaram | " " | " " | Palaeolithic |

**f. Other Agencies**

| Sl. | Name of the Institution | Excavated site/District | year | Nature of site |
|---|---|---|---|---|
| 1. | Sharma Centre for Heritage Education (Dr. Shanti Pappu) | Attiramapkkam Tiruvallur | 1998-99 | Palaeolithic |
| 2. | University of Kerala, Tiruvananthapuram | Bommayarpalayam Villupuram | 1999-2000 | Microlithic |

**g. Period-wise classification of the excavates sites**

| | | |
|---|---|---|
| Palaeolithic Age | - | 7 |
| Microlithic Age | - | 5 |
| Meolithic Age | - | 8 |
| Iron age (Megalithic) | - | 57 |
| Early Historical Period | - | 31 |
| Medieval Period | - | 20 |
| Modern Period | - | 4 |
| Total | | 132 |

## PART I.

## III. PERIODWISE CLASSIFICATION

### Geology

A major part of Tamil Nadu consists of an assemblage of crystalline rocks of Archaean metamorphic complex. The Archaean rocks were formed during the very early period when there was no life on earth. They are mostly of igneous origin comprising metamorphosed granite and basaltic rocks together with a subordinate amount of sediments. They mostly consist of Archaean gneisses, schist and charnockites.

There are marine Cretaceons deposits near the coast at Ariyalur, Tiruchirappalli and Uttatur. These lie on a platform of granite gneisses and charnockite and are fringed along the western margin by thin strip of rock of Upper Gondwana age. The other notable geological formation found in the state is Cuddalore sand-stone series belonging to Tertiary beds which bear plant fossils. One of the important Wood fossils (long trunk) of a coniferous forest of this age is found exposed near Thiruvakkarai. Parts of the Territory beds are covered by laterite. Besides this, the occurrences of Upper Gondwana formation are also noticed near Sriperumbudur and Satyavedu. These are composed mainly of white to pink clays, shale and feldspathic sandstones.

However, the presence of Pleistocene deposits is very limited in Tamil Nadu. It is mainly traced in the Kortallayar river basin of Tiruvallur district. The occurrence of Pleistocene deposits is found overlying the conglomerates of Sathyavedu, in the Valley of Kortallayar River. Besides this, the exposure of Pleistocene boulder conglomerates yielding Old Stone Age tools, over lying the upper Gondwana are noticed near Vadamadurai and Attirampakkam. The detrial laterite over lying the boulder conglomerate also yield Acheulian type of tools. It is to be noted that the *formation* of existing laterite deposit in most parts of India might be formed during Pleistocene, as there is no definite criteria for determining the date of the laterite.



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**a) Palaeolithic Culture in the Kortallayar and Araniyar Basin**

The history of Chennai as most of us know started from the time the British established their trading company here, but astonishingly Chennai (Madras) has been a place of habitation for Pre-historic hominids who had lived here millions of years ago. The chain of exploration started off when Sir Robert Bruce Foote, a British Geologist, accidentally found a stone tool at Pallavaram in May 1863, followed by the discovery of enormous number of artefacts in and around Poondi near Chennai. This tremendous discovery in the field of Pre-historic archaeology pushed back the antiquity of man in Tamil Nadu to more than half a million yerars ago and placed this region indisputably on the world map of Pre historic culture.

Most of the stone implements have so far been collected from the surface of the earth but some are from the terraces of rivers. These early stone implements have been discovered at Kortallayar Valley in and around Thiruvallur.

The Madras hand axe industry occupies a very important place in the history of Indian Palaeolithic Archaeology. There are more than 120 Palaeolithic sites in the Kortallayar (old Palar) and Araniyar basin, comprising both rock shelters and open-air sites. These include the well known sites of Gudiyam caves, Attirampakkam, Poondi, Vadamadurai and others. They have yielded several Palaeolithic artefacts which are of immense importance in Indian Palaeolithic research. Systematic Palaeolithic studies in this region indicate that these sites point to extensive movement of early hominids across the landscape for over 5,00,000 years.

Robert Bruce Foote and his assistant William King undertook furious survey in the Kortallayar and Araniyar basin, discovered the Gudiyum caves and the river terrace with abundant Palaeolithic tools at Attiramppakkam. Foote then also picked up a fossilized human tibia with both ends broken amidst the numerous Palaeoliths in Attiramppakkam. Their intensive survey revealed the location of serval Palaeolithic sites in this region. There was a gap of two decades in the studies of Palaeolithic archaeology of Kortallayar region after the death of Foote in 1912.

**Renewal of Research Work by other Eminent Scholars**

Again, scholars had turned their attention towards Kortallayar basin in 1930; Cammiade and Burkitt elaborately studied the Manjankaranai river terrace and collected Palaeolithic tools. Subsequently, scholars like V.D. Krishnaswamy (1938-47) T.T. Patterson (1939), and K.V. Soundararajan (1966) identified four fold terrace system in the Kortallayar basin and boulder conglomerate horizons at Vadamadurai. They also classified the two categories, laterites of Primary Pre-Pleistocene compact laterites and secondary Pleistocene laterites. V.D. Krishnaswamy also sorted out the tools on the basis of their Patination, rolling and refinement in technology and correlated them with African traditions. A notable contribution by these scholars resulted in the recognition of a different tradition, popularly known as 'Madras hand axe tradition', from that of the Sohan tradition of north western India. A. Swamy (1976) of Madras University discovered new sites and identified the tools collected by him into three ages viz, Early, Middle and Late Stone Age. The technological aspects of the tools collected from Gudiyam and Vadamadurai were analysed by Vidula Jayaswal (1978) in detail.

**Excavations**

K.D. Banerjee of the Pre-historic branch of Archaeological Survey of India in the years 1957 to 1979 conducted excavations at Gudiyam, Attirampakkam, Vadamadurai, Poondi and Neyveli. These excavations led to a contradiction of the work of previous scholars. Banerjee denied the existence of fluvial terraces and put forward a hypothesis of marine terraces. He also questioned the existence of a pre-lateritic industry and hypothesized that tools on the surface of the shale could have been derived from the overlying horizons at Attirampakkam and believed that the laterites at this site were the horizon for a post-Acheulian flake industry. He further thought that the early Acheulian at Vadamadurai, in the Boulder-Conglomerate was possibly reworked from elsewhere.

Subsequently, Dr. Shanthi Pappu of Sharma Centre for heritage education, Pune, undertook systematic excavations at Attirampakkam to establish the nature of hominid activities at the site, its environmental context of the site and the age

of the assemblages, The excavations (1999-2004) revealed the lower, middle and upper Palaeolithic cultures spanning more than 5,00,000 years of occupation. Thousands of tools of Lower Palaeolithic Acheulian hominids were found deeply buried within beds of laminated clay, indicating a possible lagoonal or swampy environment close to the palaeo-Kortallayar. Below the clay beds, tools were also found in sandy clayey deposits, indicating a possible near shore environment. At the depth of 3.6 m below the surface, an Acheulian living floor was exposed, with large boulder cores, artefacts and debitage in association with a set of animal foot prints, the first of their kind to be documented in South Asia. These comprise a set of 17 round impressions (diameter of 15-20 cm) and a set of hoof-prints, which are under study. The discovery of three fossil teeth is significant, as fossils are rare at Indian Lower, Middle Palaeolithic sites. These include an upper molar of a water buffalo, a lower molar of a horse and a left lower molar of a nilgai. These indicate at least three different fossil species suggestive of an open and wet landscape.

**Striking Survey by the Tamil Nadu State Department of Archaeology**

The Tamil Nadu State Department of Archaeology undertook systematic archaeological investigations and located several new Palaeolithic sites in this region. Among these, Pankulam which is situated on the western bank of Kortallayar, is notable as it reveals all types of Acheulian tools. There is a mound which was formed by the outliers of the Allikulli hills. This site was excavated during 2005-06.

Under the instructions of the author an intensive field survey was conducted in 2004-05 by a team, consisting of two Archaeologists and a Geologist, in the Palaeolithic sites of Kortallayar region. The objective was to record their original archaeological importance and to make a comparative study for correlating their Geomorphic setting and the tools types with each other. This survey yielded a portion of a wood fossil embedded with fossilized bone pieces at its back from a bed of a stream near the village of Mettupalayam. At the time of inspection of the survey work, the author had collected one more fossil piece from the same place. These fossil portions have been sent to the Tamil Nadu State Geology Department for further investigations. It is a remarkable find as the occurrence of fossils is very rare in this region.

***Parikulam***

As a follow up to the exploration the site of Parikulam was selected for excavation in the year 2005-2006. Two trenches were laid and innumerable Palaeolithic stone objects were recovered numbering 243. They comprised rare objects such as Handaxes, Ovates, Cleavers, Scrappers, Borers, Lunates, Blades, Stone hammers, etc. A Paleolithic channel was also identified running across PKM-I. The dig proves the influential evidence for study of Palaeoithic epoch of ancient Tamil Nadu in this region. The excavation confirms that a) the place was continuously occupied by hominids from early Palaeolithic through Middle to Late Palaeolithic period. b) It confirms the existence of an Acheulian tool making industry in this region.

From the above factor it can be inferred that Kortallayar basin was the cradle of mankind in South India. It is proved by the recent excavation at Attirampakkam which clearly demarcated the oldest date of the lower Palaeolithic of this region to 5,00,000 years. The intensive researches so far conducted in this region by several scholars reveal that the ancient hominids might have migrated from here to other parts of Peninsular India.

***Poondi* Museum:** To focus on the pre-history of Tamil Nadu as a whole and the Palaeolithic age of this region in particular, the State Department of Archaeology has established a site museum at Poondi in the year 1985 for the benefit of the public, students and scholars. This museum is a unique one as it features the pre-historic heritage of Tamil Nadu. It is the only site museum in India, which portraits the palaeolithic culture of the region.

**b. Mesolithic (Microlithic) Culture**

The late Stone Age or microlithic age succeeded the middle stone age. An important feature of this culture was the extensive use of microliths.

In Tamil Nadu large number of sites have been reported in the region around Tirunelveli, Madurai and Ramanathapuram districts. Many major sites of this culture are found to the South and North of Tamiraparani River. Microlithic tools

were first reported by Bruce Foote in this area and Aiyappan wrote about some of the tools from Sawyerpuram. Allchin and Zeuner wrote elaborately about typology of the tools and gave an interesting picture of the climatic and geographical conditions of the area. Excavation have been carried out at following sites; Attirambakkam, Mangudi, Tiruthangal, T.Kallupatti, Mayiladumparai, Dailamalai, Togarapalli and Mullikadu.

**Teri:** The low-lying lagoons were filled with sand and sand dunes were formed due to the wind. Afterwards due to climatic change intensive weathering occurred. This cemented the sand dunes and turned them reddish. As they are associated with fossil red sand dunes are locally called as 'Teris ', and the sites as Terrisites. In this way three terraces were formed at the height of 23, 50 and 100ft, above the present sea level.

**Tool Types**: Two stages of Teri industry are noticed, one early and the other later, which can be distinguished on typological analysis. Meygnanapuram collection was the earliest collection found in Sawyerpuram area.

1. An industry represented by flake and core tools. These tools are highly stained.

2. Besides the former, blades, geometric tools are collected. These tools are slightly stained.

The common tool types are Blades, Scrappers, Discoids, Points, Lunates and Chopping tools. All the tools show varying degrees of retouch, pressure flaking and usage marks. The industry has been tentatively dated to 4000 BCE on the typological basis and also on the study of the sand dunes.

The late Stone Age industry is mostly made of flakes with unifaceted low angled platform and occasionally of cores. Retouching by secondary working is confined to margins only. The materials used for manufacturing tool are quartz. However crystal and chalcedony are also used occasionally. Some of the salient fertures of the excavations and their significance are elaborated below;

***Mayiladumparai***

The excavation at Mayiladumparai exposed one-meter deposit of microlithic blades, lunates and points. In addition to this several animal bones were also obtained. Pottery was absent in the deposit. This is the first microlithic site so far reported in Dharmapuri region.

***Mangudi***

The Archaeological excavation was conducted at Mangudi in Tirunelveli district by the State Department of Archaeology in the year 2003. The excavation brought to light several microlithic tools. This was the earliest cultural deposit found in the trenches. The occurrences of microliths in the stratified layers were very clear at Mangudi. A sterile layer below the megalithic cultural phase was also noticed. Under this sterile layer the microliths were found. From this it can be assumed that after the microlithic phase the area was not occupied and later on the megalithic people occupied this area. The microlithic tools are also found in nearby villages namely Arugankulam, Puttur, Cholapuram and Thenmalai.

Though the Mesolithic (Microlithic) period artefacts were discovered at far south in the Teri sites of Tirunelveli during exploration, it is for the first time that Mesolithic stone tools were found in the excavations at Tiruthangal and Mangudi by Tamil Nadu State of Archaeology department.

**Date:** The chronology of the microlithic culture in South India is not yet settled. However, the available evidence from Sawyerpuram dates it to 4000 BCE. The stratigraphical position at Attirampakkam suggested that the microlithic culture was in fact a continuation of the old stone age.

**c. Neolithic Culture of Tamil Nadu**

In the cultural history of mankind the Neolithic age marks the concluding phase of the stone tools culture. The Neolithic age is characterized by the introduction of more evolved and developed typo-technological features. Man transformed from "food gathering stage to food producing stage".

A characteristic of this age is evolution of grinding and polishing of stones after they were fashioned by the usual flaking techniques. As a result the worked tool was usually smooth having rounded edges.

The salient features of Neolithic culture are settled life or sedentary settlements in villages, domestication of animals, domestication of plants and manufacture of pottery and ground stone tools. So Scholars called this the ***Neolithic Revolution.***

Districts like Salem, Dharmapuri and Vellore endowed with castellated hills and natural caverns which were an ideal region for habitation of Neolithic people.

Investigation on the top of hills such as Shevroy, Vattalmalai, Kalrayan and Javadu hills has yielded number of Neolithic tools of pecked and ground stone industry along with microlithic tools comparable to the late Stone Age tools. But there is no habitation site with pottery or any other indications found on the top of the hills.

Some of the important Neolithic habitation sites in Tamil Nadu like Paiyampalli, Chandrapuram, Gollapalli, Toggarapalli, Pannimaduvu, Dailamalai, Mullikadu, Kappalavadi and Bargur in this region, show evidences of Neolithic culture.

The archaeological excavations at Paiyampalli, Mayiladumparai and Modur have thrown more light on the study of Neolithic culture of Tamil Nadu.

***Paiyampalli***

The excavations at Paiyampalli by Archaeological Survey of India show a clear distinct feature of Neolithic and Megalithic cultures. During that time people lived in pit dwellings, cut into the natural soil. These pits being oval, circular etc, had super structures of perishable materials as evidenced by post holes along the periphery. The excavation also shows some distinct developments in the mode of man's life constituting the Neolithic stage, the technique of preparing ground and the polished stone axes and association of microliths with the Neolithic culture.

***Mayiladumparai***

The excavation at Mayiladumparai conducted by the Tamil University yielded a deposit of Neolithic appendage dated 3000-1000 BCE, with hand made red ware pot sherds. The findings show the smooth transformation from the Microlithic through Neolithic to Megalithic culture in this region.

***Modur***

The State Department of Archaeology conducted systematic excavation at Modur hillock in Dharmapuri district during 2004-2005. The excavation yielded number of stone objects like spheroid rubbers, oval shaped discoids, pestles, discoids, grooved hammers and different type of grinders. More than 500 stone objects were found. For the first time 11 Neolithic celts were unearthed in the stratigraphical layers. Most of the tools were obtained in the Pre-Megalithic levels. It is noteworthy that many tools of similar types were also obtained in Piklihal, T.Narasipur and Paiyampalli.

The excavation carried out at Modur, a Neolithic settlement yielded large number of new Stone Age artefacts. This has to some extent solved the Neolithic problem in Tamil Nadu.

**Chalcolithic Epoch**

The Chalcolithic period also known as Copper-Bronze Age succeeds the Neolithic period in the evolution of cultures. In the Deccan, traces of Chalcolithic culture are abundantly found in Jorwe, Malwa and Inamgaon. However, the excavations at Neolithic sites in Tamil Nadu have not yielded copper-bronze objects in any significant manner. This leads to the conclusion that in Tamil Nadu the Iron Age succeeded the Neolithic period bypassing the Chalcolithic age. Why did this happen? This is an area which is open for further research.

**d. Iron Age (Megalithic)**

Of the nearly 120 sites excavated so far more than 50 % (56) belong to the Iron Age. The exploration and excavation carried out in the northern parts of



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Tamil Nadu Particularly in the river valleys of Palar, Pennaiyar, Kaveri, Vaigai and Tamiraparani yielded clear evidence for studying the iron age of Tamil Nadu.

Almost all parts of Tamil Nadu have revealed the existence of megalithic burials of different types such as dolmenoid cist, slab cist, cairn circles, menhirs, burrows, urns and sarcophagus etc., The megalithic types in northern parts of Tamil Nadu (comprising the districts of Tiruvallur, Kanchipuram, Vellore, Villupram, Tiruvannamalai etc.,) shows mainly the slab cist burials. At Amirthamangalam, Urns with tapering bottom occurred within cairn circles, whereas slab cist within cairn circle were noticed at Sanur, Perumbair etc., Sarcophagus were noticed within the cairn circle at Tiruttani and Tirumangalam Kandigai. In the western part of Tamil Nadu comprising the districts of Coimbatore, Nilgiris, Salem, Dharmapuri and Erode we have Dolmenoid cists, menhir, and slab cist within the cairn circle. Some urn burials are also noticed in this region. The southern most part of Tamil Nadu such as Tirunelveli, Madurai and Ramanathapuram yielded mostly urn burials.

The megalithic burials at Mottur in Tiruvannamalai district and Udyanatham in Villupuram district have anthropomorphic figures. Stray findings of megalithic burials were noticed in more than hundred sites in Tamil Nadu. Systematic excavations were conducted by different agencies in the following sites namely, Amirthamangalam, Sanur, Kunnathur, Kodumanal, Adichanallur, Kovalanpottal, Auroville, Sittannavasal, Mottur, Appukallu, Mallapadi, Kallanmalai, Nedunkur, Sembiyan Kandiyur etc. Though the megalithic burials are noted in several places of Tamil Tamil Nadu it is very hard to find the habitational deposits. However, only three excavations at Kunnathur, Kodumanal and Mallapadi have yielded habitational deposits. The previous excavations done by Alexander Rea yielded nearly 4000 artefacts from Adichanallur. They include copper, iron and gold objects. On examination of the bones collected from the urn it was found that one type of bone belong to the group of Austroloid and the other Mediterranean. The recent excavation at Adichanallur also revealed the habitational layers of the megalithic age.

***Kodumanal***

The Tamil Nadu State Department of Archaeology in collaboration with the Tamil University, Thanjavur conducted excavations at Kodumanal situated in Perundurai Taluk in Erode District.

The excavation had brought to light two cultural periods viz:

1. Megalithic period and

2. The early Historic period

Black and red ware, black slipped ware, russet coated ware and red slipped ware were found in the excavation. Apart from these, beads made of quartz and clay, inscribed pot-sherds and graffiti pot-sherds were unearthed.

A megalithic cairn circle at this site was also excavated. The grave goods such as lids, bowls, dishes, four legged jars and ring stands were found placed outside the primary cist. At the south eastern side of this primary cist an urn was found which surprisingly yielded 782 beads made of carnelian. An iron sword measuring 169 cms length was also found at the eastern side of the main cist. Besides, four iron swords, a copper toddy filter, double edged axe, small daggers, stirrup like object, potsherds bearing graffiti were also gathered.

***Kovalanpottal***

Kovalanpottal is situated at Pazhanganatham, a hamlet of Madakulam Village in south Madurai circle in the Madurai District. A tradition says that Silapathikaram hero Kovalan's decapitation took place here. To probe into the antiquarian value of this spot, in the year 1980 excavations were conducted.

In trench no. 1 the most significant among the findings were the three layer of urns. One urn was thrown open, and inside were found a skull, the bones of human beings and potteries. A square copper coin carrying the figure of a fish on one side was also found at 45 cm depth.

***Adichanallur***

Adichanallur is a famous urn-burial site, located on the bank of river Tamiraparani in Thoothukkudi District. This site was excavated by Alexander Rea, (in 1899-1906) M. Louis Lapicque of Paris University (in 1903-04) and Anderson (in the year 1914).

Again the site was excavated by Archaeological Survey of India in the year 2004-05 and exposed more than 150 urns and located a habitation site near the burial site. An important find is a sherd with beautiful applique design outside. The series of motif show a tall majestic looking woman, a swathe of standing paddy next to her, a crane, a deer, a crocodile and a lizard. These motifs resemble pre-historic paintings found in cental Tamil Nadu and shows some interlink with each other. Inside the urns, copper bangles, human skeleton, grave pots, paddy and husk, were found. Outside the urn, ritual pots, Iron dagger, spearhead, Iron implements and Neolithic celts were noticed. The excavation revealed the method of burying urns in three tier system. Earliest generation buried the dead in urns at a depth of 10 feet by cutting a rocky area. Next, two generations buried the dead above in two tiers. The urns have garland like decoration in the neck portion of the urns.

A habitation site was also located nearby the burial site. The excavation revealed potter's kiln with ash, charcoal and broken pots. Artefacts like Iron knife, carnelian beads, terracotta beads and bone implements were also collected from this site. The date of the site is fixed Preliminarly by Thermo luminescence dating from 1500 BCE to 500 BCE.

***Nedunkur***

Nedunkur is situated 25 Km from Karur town, Aravakurichi Taluk, Karur District. It is considered to be an important historical town, as it is located on the ancient Rajakesari Peruvazhi (Highway), which connects both west and east coast of South India. Excavation at Nedunkur was carried out in the year 2006-2007.

Excavation conducted in the habitational sites as well as in burial site yielded Black and Red ware sherds, coarse red ware sherds, Black ware sherds and iron objects viz, knife, arrow-heads, and spear. More than fifty potsherds with varied form of graffiti marks were collected during excavation. Nedunkur excavation has revealed the presence of Iron Age Culture (300 BCE to 300 CE) in this region.

***Sembiyan Kandiyur***

During the years 2004-2005 an intensive Epigraphy campaign was launched by the author to copy all the 25000 plus Tamil inscriptions available in Tamil Nadu. During the campaign Thiru G.Muthuswamy, Curator of Tranquebar encountered two Neolithic stone tools from a garden in the village of Sembiyan Kandiyur. To our surprise one of the tools carried four sign marks resembling Indus-like symbols. This was promptly announced by the author during the monthly lecture on 28th April 2006. Subsequently an Exhibition was organized in which the object was exhibited to the general public. This generated a lot of excitement among the intelligentsia as it opened possibilities for a Dravidian link with the Indus script (not yet deciphered). As a follow up measure, an International Symposium was held in February 2007 in which scholars from various disciplines participated. It was decided then to carry out excavation at this site so as to gain better understanding of the Archaeology of the area.

During the year 2007-2008 excavation yielded Megalithic (Iron Age) appendages like Black and Red ware sherds, Black ware sherds and Red slipped ware sherds. Thirteen graffiti marks were observed in the pottery collection from excavation trenches laid at Sembian Kandiyur. Pots (small to big) lids and plates were the common shapes encountered in this excavation. Terracotta hip-hops and stone hip-hops were also recovered from the trenches. Besides this, the occurrence of eight Urns laid in a row were also exposed during excavation. On the basis of rich yield of Megalithic antiquities, it is ascertained that Sembian Kandiyur was inhabited during 1st Century BCE (Megalithic-Iron Age).

**The Cultural Aspects**

The main aspect of this culture is the discovery of Iron and its wide usage. The Iron Age people used iron implements for hunting, warfare and for agriculture. The people knew the art of wheel-made pottery which is an important aspect of this period. The religious ideas developed in this period, which was reflected in the mode of burials and the belief in life after death. This period also saw the development of script from graffiti marks and Brahmi script occurred in the potsherds collected from the excavations. The megalithic people lived in groups and led a well-settled life. Conflicts between groups occurred frequently. Cattle were the main reason for the conflicts as these people considered them as their wealth. So the conflicts occurred whenever the other group confiscated the cattle.

**Rock Art of Tamil Nadu**

Rock art is a term used to denote artistic expressions on rock media such as bare surface of caves, rock shelters and boulders. They appear in several forms such as painting, etching, engraving, bruising etc. The early cave man was a nomadic hunter-gatherer, whose life was inextricably linked to his physical and natural environment. What he saw, he reduced to painting in the caverns inhabited by him.

It was widely believed that Tamil Nadu had no rock art of any significance. But, this was till a few decades ago. In the late seventies, Prof. K. V. Raman chanced upon rock engravings in Mallapadi in Dharmapuri District, thereby flagging off the race for identifying new sites and the effort has not been in vain. Till date, more than thirty sites along the Western and Eastern Ghats have been identified, many of them by officers of the State Department of Archaeology. This has conclusively proven the existence of Cave men who inhabited the rocky shelters of Tamil Nadu in the Iron age (megalithic period). It has also established the State's claim to be considered as one of the important regions for studying and interpreting rock art. Places where the rock arts are found:- Kilvalai, Settavarai, Alambadi, Padiyandal, Kollur, Nayanur, (Villupuram district) Mallapadi, Maharajakadai,

Mallasamudaram (Dharmapuri district), Tirumalai, (Sivaganga district), Sirumalai (Dindukal district), Vettaikkaranmalai (Coimbatore district).

The dating of the rock paintings is everywhere a complex problem and it is so even in the Indian situation. The paintings are on the surface and no technique is at present available for dating them directly. So far no fragment of rock paintings has been found buried in an archaeological layer at any site. Therefore we have to depend on indirect and circumstantial evidence to date the paintings In Tamil Nadu the Neolithic period is assigned to 4000 BCE -1000 BCE while the Megalithic period is dated to 1000 BCE to 500 CE. The Tamil Nadu rock paintings have been found close to these sites, which have Neolithic and megalithic cultural traits. The Neolithic people began the painting tradition and it continued during the Megalithic and historic period, when the rock shelters were abandoned and the people started living in settled life The occurrence of Megalithic burials, typical black and red ware potteries, and the paintings of the horses show that they were bearers of Iron Age culture, around 1000 BCE to 500 CE.

The study of rock paintings is more a field of scientific approach to systematize the social, cultural and historical phases of human behaviour and his initiation into the ritualistic and religious beliefs.

The rock paintings are earliest evidence of regular art activity in Tamil Nadu. They also tell us the contemporary animal life, which is otherwise inadequately known because of the paucity of the skeletal remains. The gradual and intellectual development of art and civilised living was then progressing into the historical time. It is clear that dancing had the central role in communal life of those people. They danced in circles for fear of the wild animals, or for ritualistic and communal co operation. Dancing could have served as a means of inducing disciplined common effort in capturing large animals. The later paintings of settled life showed the conflict between two different groups of men as noticed at Mallappadi and Vettaikkaranmalai. The Neolithic paintings at Settavarai, Alambadi and Kollur show skins of animals left to dry, which indicate that the man had acquired the art of

tanning skins for clothing and shelter. At Alambadi the painting of men wearing masks of birds or animals or human beings, might have established the influence of ritualistic belief. The masked dances are an integral part of Indian culture in rustic and tribal living even today.

Among the rock paintings so far discovered, only in Kilvalai some signs similar to Harappan symbol are found. The occurrence of four men rowing a boat and a big sign before them indicate the direction by which they had to travel. Such transport indicates the migration of people to other places. It is interesting to note that in places like Kilvalai, Maharajakkadai and Mallachandiram the symbols and markings observed on the rocks show features similar to graffiti marks found in the megalithic period pot sherds. Probably the paintings have more convergence to the megalithic period. Investigations on the above, interesting finds can be thoroughly undertaken in the near future.

**Conclusion**

In Palaeolithic period man led a nomadic life and his main occupation was *food gathering*. In the Neolithic period he became a *food producer* and lived in small settlements. He invented pottery making, began to domesticate animals and used them for agricultural operations. He lived in thatched huts and pit dwellings. In this period Neolithic people began to dispose the dead bodies by burying them near their dwellings. The megalithic people advanced rapidly. Their main achievement was the invention of Iron. They followed a well developed system for disposing the dead bodies. They respected and worshipped the deceased. So they built big monuments by using massive stones for their burials. Their technological advancement is revealed in pottery making by wheel, smelting of iron and using it for making implements for various purposes. So the megalithic age paved the way for a new beginning, of a developed and civilized life style of mankind.

**e. Early Historic Period (300 BCE - 500 CE)**

As far as the cultural heritage of the historical period is concerned lot of materials have come to light from excavations undertaken at historical sites. Of

the sites excavated so far *Arikkamedu* in Pondicherry state; *Poompuhar, Alagankulam, Korkai, Karur, Uraiyur, Vasavasamudram, Kodumanal, Andipatti, Mangkulam* and *Kanchipuram* in Tamil Nadu state are the most significant sites, which have yielded enormous artefacts on the cultural aspects of early historical period of Tamil Nadu.

***Arikkamedu***

*Arikkamedu* was the land mark excavation which confirmed trade links between South India and Roman Empire. The excavation revealed a rectangular shaped godown and a granary in the northern side of the mound. These buildings have large walls built of well baked bricks with clay as the binding material. The external sides of the walls are covered with lime plaster. Foundation wall goes upto one and a half meter deep.

In the southern side of the mound two dyeing tubs measuring 3x4 meter square were exposed. These are also built of bricks and the floors of them are also laid out with bricks. In addition to the above structures a number of ring wells had also been unearthed

Considerable quantities of imported potsherds such as Arretine, Amphorae and Rouletted wares were unearthed. Some of the amphorae have handles on either side and the Arretine pieces bear the manufacturers' seals. A variety of pot known as *Terra Sigillata* has also been collected during recent excavation from this site.

Terracotta images, beads made of semi precious stones, conch and fired clay and inscribed potsherds are the other important artefacts of this site.

***Uraiyur***

At this site 21 postholes were exposed in the trench. These postholes are believed to have been used for some religious purpose most probably for performing sacrifice (Yajna).

A dyeing tub was also unearthed from another trench. One part of it was in square while the other part was in rectangular shape. The exposed structure consisted of seven courses of bricks 17x3 inches.

A considerable number of inscribed potsherds bearing Tamil character were unearthed. The letters of these sherds seem to have been engraved by a *nail after* firing. Besides a few sherds with graffiti was also collected.

The habitation at this site was not continuous as the river Kaveri appears to have flooded the town often.

Terracotta images, beads of different material, bangle pieces of glass, terracotta and conch, gamesman, ear lobes, smoking pipes, spindle whorl are the other important findings of this site.

***Kanchipuram***

This site seems to be the best of all in supplying artefacts from the Pallava period to Vijayanagar period continuously.

It had yielded rouletted and an amphorae potsherd of Roman origin along with 59 conical jars of indigenous origin. A copper coin of Satavahana king Rudhra Satakarni, a lead coin bearing the figure of Lakshmi with archaic Tamil legend and a copper coin with Ujjain symbol probably of Satavahana and a coin of Rajaraja were also unearthed.

Beads made of copper, coral, glass and semi precious stone, a comb of shell and a terracotta elephant head have also been collected.

A structure believed to be the Buddha Vihar and the circular foundation of stupa were exposed here. Below this structure a grey ware sherd engraved with archaic Tamil inscription reading 'Putalatisa' which may indicate the name of a Buddhist monk had also been brought to light.

The most outstanding discovery of this site are the 11 terracotta coin moulds of which two are of punch marked coins, five are of Satavahana coins, three are of Pallava period and the last one may also be a Pallava coin.

***Tirukkampuliyur & Alagarai***

A wall built of sun dried bricks having seven courses assignable to medieval period was exposed. In addition to this wall the flooring was also noticed.

In another trench two walls build of sun dried bricks were unearthed. This structure appears to have been built for storing grains.

Beads of semi precious stones, glass bangles, shell bangles, objects of bone, copper rings, iron objects and terracotta images are the other important artefacts of this site. Of the terracotta images Mother Goddess, Phallus with Naga, torso of a male, head of a male, mother and child, Ganesa and its mound mouse are the significant findings.

Potteries of this site especially russet coated potteries are worth mentioning, Graffiti sherds bearing symbols of trisul, star, bow and arrow, ladder, plant, flower, leaf, bitriangle, wavy lines and Ujjain symbol are very interesting for comparative study.

Thus the above sites have supplied immense material for understanding the cultural heritage of Tamil Nadu. However these archaeological materials are to be analysed in detail to know the different aspects such as domestic life, industries, trade contact with other countries, social life, sports, religious life etc. of those periods.

***Korkai***

Korkai is a small village in Srivaikuntam Taluk of Thooththukkudi district. It is situated at a distance of 3 kms to the north of the river Tamiraparani. The sea originally had receded about 6 kms to the east. The river Tamiraparani skirted this town in ancient days. The site is referred to in Tamil Sangam literature and has attracted the notices of the classical geographers as an important port of pearl fishery. In the excavation, a structure with nine courses of bricks in six rows was unearthed at the depth of 75 cms from surface level. Below the stucture three large sized rings placed one over the other and used as soakage were found. Inscribed potsherds bearing Tamil Brahmi letters assignable, to 300 BCE to 200 CE were also found. Charcoal samples were collected which were assigned to 785 BCE by the Tata institute of fundamental research, Mumbai.

***Karur***

Karur is situated about 70 kms from Trichy town and it is a district headquarters. There are different views among scholars about Karuvur - Vanci, the capital of Sangam Cheras. The excavation results have thrown valuable light on the identification of this place Karur as – Vanci.

These excavations revealed a house site with brick flooring and a drain joining to a brick structure. The important findings are several potsherds with Tamil Brahmi inscriptions assignable to the beginning of the Common Era. The inscribed potsherds were found along with Roman Amphorae and Rouletted ware of Mediterranean origin. One Roman coin was also unearthed in the excavation.

***Alagankulam***

Alagankulam is a village situated on the east coast in Ramanathapuram Taluk and District. The village is situated on the banks of the river Vaigai and is about three kilometers away from the sea-shore.

The most significant findings of the excavation are hundreds of potsherds, of the Mediterranean region. They include Arretine ware, Rouletted ware and Amphore jar pieces. The Arretine ware is a reddish ware made of clay and it belongs to the imperial Roman world. Pieces of red ware with Tamil Brahmi letters have been found. They are assignable to the first century BCE. Other antiquities include beads, perforated tiles, and bricks in various levels. Three Roman coins were unearthed. They contain the figure of the head of the Roman Emperor on one side and the figure of goddess victory, holding a globe on the other side. The legend on them shows that the coins were issued by the Roman Emperor Valentine II who ruled around 375 CE.

***Poompuhar***

Poompuhar, situated at the confluence of river Cauvery with the sea, was a flourishing port city and the second capital of the *Cholas* in the Sangam period. It is situated in Sirkazhi Taluk of Nagappattinam District. Department of Archaeology

conducted excavation at *Kizharveli* and Dharmakulam areas. The *Kizharveli* excavation revealed two brick walls, running North east-South west at a depth of 20 cms. Soft clay had been used as binding material. These two brick walls, were placed wide apart and provided with platforms, the intention being that there should be free movement of water. Four wooden poles were found to have been made of the palmyra tree trunk and the other two made of iluppai tree trunk (bassia longifolia). This structure seems to have served as a wharf in the 4th century CE.

Under water exploration work was also conducted at Poompuhar in the year 1996-97 in collaboration with National Institute of Oceanography, Goa. Lead ingots were obtained in the search.

***Andipatti***

The excavation was carried out at two habitation mounds locally known as Nattamedu & Sambalkadu and twelve trenches were laid bare. Two stratigraphical layers with average depth of 1.50 mts were noticed. The site yielded potsherds of Megalithic and Historic period i.e., black and red ware potsherds and coarse red ware sherds. On the basis of unearthed antiquities such as terracotta objects, and figurines of 6$^{th}$ to 12$^{th}$ century CE, it is understood that this site had been continuously inhabited since 1$^{st}$ century CE till 12$^{th}$ century CE. Two cultural periods are demarcated from the unearthed antiquities. Period-I ( 1$^{st}$ Century BCE to 5$^{th}$ Century CE) is characterized by the yielding of inscribed potsherds, graffiti potsherds and grooved tiles. Period-II (6$^{th}$ Century CE to 12$^{th}$ Century CE) is characterized by the presence of spindle whorls, hip hops, shell bangle pieces and terracotta figurines.

The remarkable findings include inscribed potsherds, graffiti potsherds, and terracotta figurines of mother goddesses. The inscription reads as; 1. *atta*, 2. *Kuma* & 3. . . . . *Iganathila*. The discovery of spindle whorls and iron objects proves the fact that this site was once existed as a flourishing centre for weaving and iron smelting industries. The other antiquities includes, semiprecious stone beads, terracotta beads, shell bangle pieces, terracotta ear lobes, grooved tiles, terracotta

pipes for iron smelting, hip hops, iron objects such as knife and nails, copper objects, terracotta figurines and pottery like black and red ware, slipped ware and coarse red ware.

***Mankulam***

Madurai is one of the ancient cities in India that enjoyed continuity in the history from Pre-historic times. Due to its cultural prominence, Madurai is described as "The Athens of South India". It is also well known as a great centre for learning from very early times. As the seat of the Tamil academy called Sangam, it wielded great influence in the literary and cultural fields. During the glorious rule of Pandyas, Madurai had overseas connections for both commercial and cultural activities.

It is believed that Jainism spread in to South India by the migration of Jaina followers from Karnataka. They reached Madurai through the Kongu region and settled around natural rock shelters. Number of Jain beds in the hillock at Mankulam where already several Brahmi inscriptions dating back to 3rd Century BCE have been noticed. During the Year 2006-2007 excavation commenced at the hillock called Kalugumalai (also known as Ovamalai). Four trenches were laid at Mankulam; two were at the foot of the hill and two trenches were laid at the top of the hill near the inscriptions site. On top of the hillock a buried structure with large number of grooved tiles, broken potsherds and iron nails, were exposed. The brick measured 35X17X6 cm. which is similar to Sangam period bricks datable to 300 BCE- 300 CE. Additionally 34 rock beds were located in the caves which were used by Jain Monks. The excavation proves the occupation of the site by Jain teachers for religious propagation continuously from the 3rd Century BCE.

**Conclusion**

The rapid development of fully evolved script and language formed the basis of present day Dravidian languages. Advancement in art, architecture, rise of trade centres, establishment of industrial centres and commercial activities are

some of the salient features of this period. The rise of powerful middle class and merchant communities gave rise to the formation of large empires like the Pallava, Pandya and Chola dynasties. This period also saw the migration of people from one place to another.

***Kalabhras***

After the close of early historic period and dawn of Pallava and Pandya dynasties of 6th century CE, Tamil Nadu was enveloped in a long historical black out for a period of more than three centuries. This is what the historians call the Kalabhra interregnum. Most of the great literatures like the epics Silappadikaram, Manimekalai and eighteen minor works were written during this period. The Pulankurichi inscription is said to have been dated to 4th century CE on paleographical grounds. The king mentioned in this inscription has been identified by scholars as the Kalabhra ruler Chendan Kurran. Further archaeological excavations can solve this problem of identifying the Kalabhras and the cultural history of this period.

**f. Medieval Period - (900 CE - 1400 CE)**

Tamil Nadu in the medieval period experienced similar cultural changes which were noticed all over India. Construction of palaces by bricks and temples by using granites, urbanization of settlements by moving into townships, development in arts and crafts, trade and commerce, emergence of religious sects were the unique features of this period. It was the period of continuation and consolidation of the early historic period.

The emergence of coinages as a means of exchange and formation of merchant guilds paved the way for extensive trade and cultural contacts. This period also saw a spurt in building activities; unbaked brick and subsequently burnt bricks were used for construction. The development of commercial contact with the Far eastern countries established the coastal Forts and saw the emergence of walled cities and all other aspects of urbanization. Art, architecture, trade contact with Far eastern countries, religious patronage and other cultural developments were exposed by the excavations.

As the major cities were mostly located in the river basins, excavations were conducted along the Palar, South Pennar (Ponniyar), Kaveri, Vaigai and Tamraparani river basins. Capital towns were also covered by exploration and excavations.

In the medieval period Thanjavur was an important centre and capital of the Chola king Raja Raja-I. Archaeological excavations were conducted in the following places viz, *Thanjavur, Kurumbanmedu, Palayarai, Gangaikonda cholapuram, Kannanur, Padaiveedu, Pallavamedu, Maligaimedu* and *Sendamangalam, Marakkanam.* These excavations show the structural remains and other important cultural history of the *Chola* dynasty.

***Mamallapuram***

The excavation carried out by Archaeological Survey of India, revealed an ovalish shaped structure with four courses aligned in North-South orientation. The ovalish structure was found to enclose a monolithic sculpture of Bhuvaraha near the southern apse and in the middle shrine with adhisthana portion carved in the bed rock and a structural superstructure and further north well cut into the sands all aligned in the north-south direction. The Bhuvaraha sculpture was carved out of the sand bed rock on which the image of reclining Vishnu has been carved between the two shrines of shore temple.

The pitha bears a single line inscription in the usual Pallava Grantha script - *Srirajasimha, Srirangaraya, Sribhara* and *Srichitrakara mukha* of Narasimhavarman II, i.e. Rajasimha CE 700-727.

The excavation conducted in the southern side of the shore temple revealed a part of jetty point extending towards the east and might have served as a launching point for small boats through a small inlet [back water] from the sea. The significant construction methods adopted in the jetty, by locking the veneering stones to prevent internal collapse. A brick structure was also exposed here with the size of bricks 32x18x6 cms Coarse red ware pot, dish bowl of red ware; few pieces of conical jar [imitation of Amphorae] were also collected from this site.

The recent excavation conducted near shore temple exposed the *garbhagriha* [sanctum sanctorum] of a collapsed temple dated to 8th century. A slab with fragment

of Pallava inscriptions "*cika malla eti*" is also found here. Other artefacts like a sculpture made of sand stone (Surya) a sitting lion sculpture and the carving of a human face etc were unearthed here. Terracotta ring well is also noticed in the northeastern corner of the exposed structure.

**Saluvankuppam Excavation (near Mamallapuram)**

The remains of a brick temple dating back to the late Sangam period (1st Century BCE to 2nd Century CE) have been discovered on the sea front, near the tiger cave at Saluvankuppam near Mamallapuram. It is found beneath a Pallava temple dated to 8th century. The brick temple has 27 courses of bricks with a square garbhagriha [sanctum sanctorum] and the temple dedicated to God Muruga. The sanctum measures 2 mts by 2.2 mts and bricks measured 40x20x7 cms belong to Sangam age. After the brick temple collapsed the Pallava kings of the 8th and 9th CE built another temple over it using granite slabs. The excavation also yielded two stone pillars with inscriptions of Pallava king Danthivarman 813 CE and Nandhivarman III [850 CE]. The inscriptions mentioned gift of gold for a perpetual lamp to burn in Subramanya temple. This is the first time a Hindu brick temple of Sangam age was discovered in Tamil Nadu.

***Kurumbanmedu* [Thanjavur]**

It is located in the western side about 3km from Brahadeeswarar Temple, Thanjavur. The imperial Cholas had Thanjavur as their capital and ruled and controlled entire Tamil Nadu in the medieval period. The mound located in this area was intended to excavate to find out the ruined remains of the palace of imperial Cholas.

Two trenches were laid in this mound. During excavation medieval period antiquities like Iron nails, tiles, big bricks and terracotta lids, lamps and porcelain potsherds were collected. The excavated antiquities showed some constructional activity and the trade contact with Far Eastern countries. Similar roof tiles, Iron nails were also found at Gangaikondacholapuram.



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***Palayarai***

Palayarai situated in the Kumbakonam taluk of Thanjavur District was the second capital of medieval Cholas. Once a flourishing city, now it is a small village with the name Kil-Palayarai. It is located about 7 km south of Kumbakonam.

Exploration was undertaken at Nandanmedu and Cholan-maligai in the year 1964-65 and some Megalithic urns and brick structures of the Chola period were discovered by University of Madras.

To bring out the remains of the Chola palace, systematic excavations were undertaken at Kil-Palayarai in the year 1984.

Totally three trenches were laid on the plain surface of the mound. The excavation yielded coarse red ware, black ware, painted and decorated sherds, rectangular roofing tiles, terracotta lamps and spouted knobs were unearthed. Based on the occurrence of medieval potsherds and antiquities the date of the site is tentatively fixed to 12$^{th}$ to 13$^{th}$ century CE. Iron nails, Bangle pieces, Terracotta figurines were also found. The above artefacts revealed the significant cultural phase of Chola Empire.

***Gangaikondacholapuram***

The eminent Chola ruler Rajendra I, to commemorate his victorious march to Gangas, founded Gangaikondacholapuram the second capital city of the Cholas. Thereafter it remained as the capital of Chola Kingdom for about 250 years. Today the temple is a world heritage monument declared by UNESCO.

The excavated structural remains revealed that it was an extensive city carefully planned and laid in accordance with the architectural treaties to suit the needs of a capital. The city seems to have had two fortifications inner and the outer. The outer was probably wider and mentioned in the inscriptions as *Rajendra Cholan Madil*, named after the builder. The inner fortification was around the royal palace probably identical with the *Utpadai Veetu Madil* mentioned in one of the inscriptions. Now the city has completely disappeared, except the foundations buried under the earth. There is a big mound called *Malaigai Medu* [Palace Mound] to mark the site of the old palace.

The surviving big temple called Gangaikonda Choliswaram built along with the foundation of the town still attest to the past glory of the place. A few villages lying around the east of the temple bear names that recollect their association with the original layout of the city. They are *Utkottai, Ayudakalam, Edikkattu, Kollapuram, Viracholapuram, Meykavalputtur, Vanavanallur and Jayankonda Cholapuram.*

In order to demarcate the boundary walls of the Chola palace, the department has commenced excavation at Utkottai [Maligaimedu] during the year 2008-2009. The objectives of this excavation are to determine the boundary walls of the fort, the size, shape and the extent of Rajendra's palace, complex the engineering skill and architectural style of this structure, and the artefacts used in that period. It is of interest to note that this is the only historic remains of the palace structure so far identified and excavated in the state of Tamil Nadu. It is our understanding that the Utkottai with the palace within it might be of the size and grandeur of Hampi, capital of Vijayanagara Empire, of 14th Century CE.

**Excavations** : The excavations were carried out at Maligaimedu, Manmalai, Kalkulam and Cholagangam in the year 1980, 1981, 1985, 1987 & 1991. Totally 20 trenches were laid and in all trenches brick structures exposed at the depth of 1 65 mts. The thickness of the wall is 1.10 mts. They are built of well-burnt bricks using Header and Stretcher method. The upper portion of the brick structure has coated with 4cm thick lime plaster. The binding medium is clay. On the foundation wall granite stone pillar base found embedded at equal distance of 1.70 mts. The stones were probably used to bear wooden pillars. In one of the trench a decayed wood was noticed near the pillars base. The pillars were to carry the super structure of the building. Totally twenty pillars bases were noticed measuring 65 Cm x 30Cm x 30 Cm. This place might have served as a pillared hall. In this excavation large quantity of Iron nails measuring 3 Cm to 50 Cm in length were collected. The occurrence of clamp nail, clamp plate, iron plate with holes etc., revealed that the super structure was made of wood interspersed with iron *nails.*

**Artefacts:** Large number of roofing tiles and pieces in different types were collected from the excavations. A copper handle of a broken sword, considerable numbers of glass and conch bangle pieces with decorations, ivory objects, with decoration were also unearthed. Numbers of sand stone objects, broken red stone pieces with fine workmanship were also obtained.

The celadon ware with pale blue and green in colour were also unearthed from the trenches and it revealed that the Cholas had trade contact with China in 11th to 12th century CE. This excavation revealed that the secular architecture of the medieval period and well planned city of the great Chola dynasty.

***Kannanur***

Kannanur was the capital of Hoysala king in 13th century CE who ruled some parts of Tamil Nadu and constructed Hoysalaeswara temple. Only three trenches were laid. A sump well was noticed in this site at a depth of 2.30 mt from the surface level. The inner well measure 50m X 50 m. The width of the sump well decreases gradually towards the bottom like tunnel and the total depth is 4.30 mt. This excavation yielded a large number of coarse red ware besides a few celadon wares. Large number of medieval roof tiles of various types was also unearthed from this site. This excavation revealed the cultural development and draining water with the help of sump well was the major finding of this place in this period.

***Padaivedu***

Padaivedu in Tiruvannamalai district was the most important capital of Sambuvarayars. It is located in between Attimalai on the northwest, the Vallimalai on the northeast, Kalyathu Kundu on the southeast and Sandavasal reserve forest on the south. So this city was surrounded by the natural fortification.

In Padaivedu nearly 16 trenches were laid. The cultural sequences of this site could be assigned as period I datable to 13th century CE to 14th century CE, which was characterized by the occurrence of the brick structure with the channels used for bringing drinking water and draining out sewage water and ring wells.

The period II could be dated to 15th century CE to 17th century CE is marked by the presence of smoking pipes, Sultan coin and a number of decorated red ware sherds and bangle pieces. Four types of channels were noticed and built with extra - ordinary skill and care. The first type of channel is found built up of brick comparably in simple method. The second kind of channel if found built of granite blocks which appear to have been used for draining out of sewage water. The third type of channel is the most significant and very interesting channel. Both brick and granite stone was used for the constructing this channel and is airtight. The granite slabs are found laid on the floor while the bricks have been used for constructing the other parts of the channel. This might have been used to supply drinking water for the royal family. The fourth type is formed with well designed terracotta pipes which were found placed one fitting the other, leaving no room for leakage and the joints were plastered with lime. The excavation at Padaivedu is significant as it brought into light the nature and style of the secular architecture of this period. Terracotta lamps, spouts, blowpipes, dice, coin mould etc, were also unearthed. Beads, bangles, copper bangles, iron objects, steatite objects were noticed in this site.

The discovery of beads, dice, amulet like object, bangle pieces, etc. indicates the cultural life of that period suggesting that they used to wear chains made of beads, played with dice to spend their leisure time. The coin mould, blow pipes and the traces of furnace all indicates that there were industries of minting coins, producing glass and iron objects.

***Marakkanam***

Marakkanam or Manakkanam was identified with Eyilpattinam in Sangam literature. Periplus of the *Eritrean Sea* refers to this place as 'Sopatnam', which would be a corrupted form of the word 'Supatna', meaning fair town. It was a port town from 300 BCE onwards right upto reign of Rajarajan-I (985-1014). Five trenches were laid in different locations of the village and 51 artefacts were recovered; they included porcelain, terracotta and iron objects, coins, ring, glass ball, etc.

**Conclusion**

The above mentioned medieval sites are quite interesting to know the cultural developments of our people. It shows the town planning and development of urbanization Systematic drainage system and separate channels for outgoing wastage water were well planned. Small tiles were used for roofing. The palace was decorated by using the round, oval shaped medallion, embedded with *yali* figures. These are some of the interesting architectural features of the medieval period.

In the medieval period kings ventured into foreign territories both within the country and abroad. This opened up opportunities for trade and cultural exchange with other countries.

Most of the sites revealed continuous occupation from the megalithic to the medieval times.

**g. Modern Period (1400 CE – 1900 CE)**

**Gingee**

The Archaeological Survey of India Southern circle carried out excavation in the Royal Enclosure (inner fortification) with a view to expose the structures and understanding the plan of the citadel as well as phases of structural activities. A mound measuring about 80mt. north-south and 70mt. east-west, located in front of the Kalyana Mahal, a seven-storied pleasure pavilion located within the enclosure, was taken up for operation. Earlier clearance work in the mound revealed the existence of a massive enclosure wall and a lime-floor indicating the existence of a large structural complex of considerable importance.

The excavation during this season, limited to about 1600 sq mt. of the mound, revealed two structural phases viz., I and II. During phase I, there were two structures (1 and 2) enclosed by a massive enclosure wall. One of the characteristic features of the structures of phase I was the use of combination of ashlars masonry for the bottom portion and brick masonry for the top portion of the walls, a feature that is common to all the Nayaka buildings in Gingee. On the other hand, the

structures built during phase II, were of poor constructional quality as rubbles, concrete chunks of roof of the earlier buildings, bricks and brick-bats were reused freely without any order. Therefore, phase I may be dated to the Nayaka period, i.e. circa 16th -17th century, when Gingee was subjected to protracted warfare.

The excavation revealed the existence of an Audience Hall and an adjacent Council Chamber. The Audience Hall, oriented north-south had two divisions. The southern portion (27.5 x 20.75 m) accommodated the ornate dais for the throne whereas the northern portion was raised in four levels possibly for the court.

On the two sides, east and south of this portion, was a low raised platform with pillar bases. Interestingly, there were no such bases in the middle as they could abstruct the view of the ruler. A closed drain originated from this portion to join probably the main network of drains. This drain served the purpose of disposing the fluids; an integral part of several ceremonies connected with the kingship and was always considered to be sacred.

Among the antiquities recovered from this area, mention may be made of two pots full of lead pellets, numbering about three thousand two hundred and rest of the antiquities were of iron. Besides, a small Ganesa statue made on schist, two silver rings and a gold ear-let were also recovered from the same pit. Further excavation would be required to ascertain the nature of structural remains to the east of the Audience Hall, towards which it seems to continue and to the south of Council Hall.

***Tarangampadi***

*Tarangampadi*, the historical port, lies on the East coast in Tarangampadi Taluk of Nagapattinam District. The river Poraiyar locally called Uppanaru, has a confluence with the Bay of Bengal on the Southern side of the fort.

*Tarangampadi* fort was first constructed in 1620 CE by the Danish. The King of Denmark sent two ships to India under the leadership of Ove Gedde with the help of Roeland Crape of Holland; a treaty was signed between Thanjavur Nayak



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ruler, Ragunatha Nayak and Ove Gedde on 19 November 1620. This agreement was written in golden leaf. According to the agreement the port *Tarangampadi* was given to the Danish traders and provision was made for collecting the tax and construction of the fort. Most of the portions of the fort reconstructed several times. Fortunately we have the original plan and other structures of the fort. Tarangampadi fort consisted of two large structures. They are the rampart wall and the main building. The rampart wall was a fairly large four-sided structure with bastions at each cardinal point.

This rampart wall was damaged due to storms. So it looks like a mound. To reconstruct the rampart wall a trial trench was laid in the year 2001. The base of the whole rampart wall was not exposed. So in the year 2002, three more trenches were laid in and around rampart wall. To reconstruct the damaged rampart wall trial trenches were laid. The aim of the excavation is to know the nature of the foundation of the rampart wall and to strengthen the foundation. Totally eight layers were exposed in this excavation.

A single layer paved brick was laid right on the Natural soil i.e. Sea Sand. Above this brick paved floor, 30 cm thick compact clay mixed with brickbats and lime was laid. Above this compact earth filling again 30 cm thick yellowish soil, locally called *'tavittuman'* was used. Over this yellowish soil, another brick floor was paved. The total breadth of the floor comes to 12.25 mt., by leaving a meter on the interior; the rampart wall is built upon this floor covering breadth of 11.25 meters.

The rampart wall consists of two walls each having a thickness of 75 cm. The gap between the two walls (9.25 cm) is filled with brickbats, soil and sand. The total height of the wall is 4 meters. The binding material used in this wall is lime mortar. The size of the bricks is 20 X 13 X 4 cm. The upper surface of the wall slopes inward in conical shape and upper surface is completely covered with paved bricks. The conical shape and the brick paved surface helps to drain the rainwater

as well as prevent any seepage of water into the wall surface. The bricks used in the rampart wall are made of fine clay and well burnt. All bricks are equal in size whereas the brick used in the buttress wall are mixed with more sand and irregular in shape.

One Chinese potsherd was collected. Flower designs and lines were found both interior and outer surface. One beautiful Chinese lady figure was also obtained. A brick course was paved on the Natural soil and a red colour soil mixed with lime was also noticed above the paved brick floor. Another course of brick paved floor was also noticed above. The rampart wall was constructed above the brick floor. So two foundation coarse of bricks were noticed in this foundation. This kind of foundation was also noticed in the Sendamangalam (rampart wall foundation) excavation dated to 13$^{th}$ century CE.

The Danish Government represented by the Director the National Museum; Copenhagen expressed a desire in 2004 to further explore the Dansborg area with a view to identify the Moat and other structures surrounding the fort. After discussion it was agreed that a joint excavation will be conducted by the Danish Government in collaboration with Arachaeological Survey of India and Tamil Nadu State Department of Arachaeology. The excavation was carried out in the northern side of the fort for 20 days in March 2008. Five trenches were laid in front of the fort and all the trenches were excavated up to the moat level. In this excavation a draw bridge constructed during the Danish period was identified at the entrance of the main gate. The bridge contained three platforms and all the three are constructed with the help of bricks and mortar. This draw bridge was made up of wooden pillars; the floor of the entrance was high and of brick-paved platform. Total breadth of the moat was 24mts. In this excavation Chinese potteries and smoking pipes made up of white clay were recovered.

***Panchalankurichi***

*Panchalankurichi* was the capital of Vira Pandya Kattabomman at the close of the 18$^{th}$ Century. It is situated in Ottappidaram taluk of Tuticorin district.



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The *Panchalankurichi* fort area measuring 35 acres remained as a mound. The aim of the excavation was to find out the remnants of the palace of Kattabomman. The excavation revealed the main palace with its east facing entrance in the southern corner; the entrance was flanked by three rooms on each side. There was a square pit about one and a half meters lined with lime plaster probably intended for storing grains. A passage with a slope to the north led to the audience hall which is the most impressive part of the structure. It had a raised platform at the western end, built of brick. The eastern part of the platform was decorated with ornamental mouldings and a row of sockets for lamps. In the northern wall adjacent to the main platform was found a cannon ball, embedded into it. The *Kalyana mandapa* lying adjacent to the audience hall has at the centre a square platform and a raised platform all around with an intervening passage. The glass bottles, stone ball cannons, porcelain plates and other antiquities of the British period were collected in the clearance of the debris.

## IV. Important Revelations from Major Excavations

The Archaeological investigations carried out in the excavation field for the last five decades have completely changed the historical picture of Tamil Nadu. The reasonably sufficient data collected form the excavations testified to the existence of the *Palaeolithic*, *Mesolithic*, *Neolithic* and Iron Age cultures, unfolding a number of aspects of human life in vogue in this period. The available published reports of scientific study in recent years have also made the time span of the sites relatively more precise than what is previously known. The story behind these archaeological investigations indeed are very interesting as it has been the result of popular curiosity and scientific techniques of investigations coupled with a new understanding of the process of culture dynamics.

**The *Palaeolithic* Culture** as revealed from the excavations carried out at *Attirampakkam* established the nature of hominid activities at the site in the environmental context and the age of the assemblages. Excavations also revealed the lower, middle and upper *Palaeolithic* cultures spanning more than 5,00,000 years of occupation. Thousands of tools of Lower *Palaeolithic*, Acheulian type of tools, were found deeply buried within beds of laminated clay, indicating a possible lagoon or swampy environment close to the Palaeo-Kortallayar river basin. A very interesting discovery was the set of animal foot prints-the first of this kind to be documented in South Asia. These comprise a set of 17 round impressions; a set of hoof-prints and three fossil teeth including an upper molar of a water buffalo, a lower molar of a horse and a left lower molar of a nilgai. (Fossils are rare at Indian Lower, Middle *Palaeolithic* sites). *Attirampakkam, Vadamadurai, Gudiyam* are some of the important excavated sites of prehistoric period that reinforced the finding at Kortallayar basin.

***Mesolithic* or *Microlithic* Age** (the middle Stone Age) succeeded the old stone age. An important feature of this culture was the extensive use of Microlithic tools used for fishing. A number of microlithic tools were recovered from the excavations at *Mangudi, Tiruthangal, Terruveli, T.Kallupatti, Mayiladumparai, Dailamalai, Togarapalli, Mulhkadu,* and *Kovalanpottal.* The occurrence of microliths in the

stratified layers was the important finding at Mangudi excavation. A sterile layer below the megalithic cultural phase was also noticed. Under this sterile layer the microliths were found. These discoveries certainly proved the existence of the microlithic culture in Tamil Nadu in the Cultural sequence and chronological context.

**The *Neolithic* People** and their settlements are equally remarkable while studying the pre-historic period of Tamil Nadu. But less investigation were carried out in South India of late prehistoric remains, which include enigmatic monuments dating back to *Neolithic* and Iron Age periods. Especially notable are the *Neolithic* ash mounds in Karnataka and Andhra regions and the discovery of various kinds of stone implements in Dharamapuri, Vellore and Tiruvannamalai regions of Tamil Nadu. The ash mound phenomenon is focused in the semi-arid granitic region of the southern Deccan, particulary in the Karnataka region. Both functional and ritual interpretations have been proposed for the ash mounds, but the activities that led to their creation remain unknown, further study in focusing this aspects has to be carried out, which will solve the Neolithic problem of Tamil Nadu. Whatever these activities were, they came to an end sometime in the middle or late Neolithic period and were eventually replaced by altogether different activities that led to the creation of monuments made up of very large stones. These megaliths are found all across the South Indian peninsula, and seem to have been created for burying the dead. Until recently, most pre-historic archaeology in South India has focused on description and chronological reconstruction. Much interpretation is required for further study on the migration and cultural traits of this period.

The pit dwelling located at Paiyampalli excavation revealed a distinct feature of Neolithic and Megalithic cultures. The excavation also showed some developments in the mode of man's life style in adopting technique for the preparation of ground and polished stone axes and the association of microlithic tools along with Neolithic culture.

The excavation at Mayiladumparai revealed the three phases of Pre-historic period i.e., Microlithic, Neolithic and Iron Age. The occurrence of hand made red

ware pot sherds along with Neolithic stone tools and the discovery of iron age implements and black and red ware potsherds reveals the fact that the transformation of Neolithic to Megalithic culture occurred in this region.

The recent systematic excavation at Modur has yielded a large number of stone objects like spheroid rubbers, oval shaped discoids, pestles, grooved hammers and different type of grinders. More than 500 stone objects were found. The recovery of a beaked mother goddess figurine in Modur is of special significance. It bears close resemblance to the figurine of mother goddess excavated at Inamgaon in Maharashtra by Archaeologists of the Deccan College, Pune. For the first time Neolithic implements were unearthed in the stratified layers and were obtained in the Pre-Iron Age levels. It is noteworthy that similar types of tools were obtained at Piklihal, T. Narasipur, Kupgal, Kudatini, Toranagallu (Bellary District) in Karnataka and Paiyampalli in Tamil Nadu. The occurrence of large quantity of polished stone Celts, and other stone objects along with Grey, brown and tan ware pots sherds coincides with the date for Neolithic culture of Tamil Nadu which is assigned to 3000 BCE.

**Iron Age Culture:** The usage of Iron was the important phenomena of Iron Age or Megalithic period as it was the harder and cheaper metal as well as more easily available than copper and bronze. Iron tools and implements helped in the advancement of agriculture which in turn leads to the development of civilizations. The development of script and languages which formed the basis of all modern languages and literature, advancement in art, architecture, formation of large empires and the rise of town and cities, emergence of a rich and powerful middle class and the widespread migration of people are the general phenomena of this age. To some extent, in this age the existence of social inequalities began which later on developed into a malevolent factor for our present day society. Sanur, Amirthamangalam, Kodumanal, Adichanallur and Mallappadi excavations have brought to light the existence of the Iron Age inhabitations and their cultural traits in Tamil Nadu.

**Early Historic Period**

In Tamil Nadu, the historic period and the classical Sangam age are identified with each other. The first bright epoch in the history of the Tamil land is that reflected in the literature of Sangam. The archaeological factors confirm the evidence of a Roman factory in the first century CE and goes to confirm the date suggested for the Sangam age.

The discovery of Roman pottery at Arikamedu was the water mark for studying the then Roman society and the trade contact between Tamil Nadu and Rome. Most ancient Roman ceramics are divided into three general categories according to their feature and functional values. The first and foremost ceramic Amphorae were primarily used for import of wine, olive oil and Quam, i.e. a kind of fish sauce. While the Coarse ware was utilitarian and undecorated; and fine ware was functional as well as decorative. Roman fine wares usually had a red slipped surface and sometimes had additional figural decoration. Depending on the local production, these fine wares be referred to as *Arretine, Terrasigillata,* or *African Red Slip. Terra Sigillata* is a broad term that applies to pottery from any locale having a shiny red slip wares made in Arezzo, Italy, a major production centre during the reign of Augustus circa first century CE, are referred to as Arretine. And the African Red Slip or ARS wares were made in Africa and date from the second to eighth century CE. Stamps are perhaps the most reliable source of information for determining locale. Each factory or major production centre had its own logo, which generally identified the owner of the factory, stamped on the vessels. These insignias not only indicate locale, but also allow archaeologists to geographically mark the development of certain pottery styles by examining distribution patterns. The unstamped potsherds are assessed by their appearance, form, shape, quality, texture, and colour of clay and decoration which have the regional expressions. Good number of stamped Arretine and the African Red Slip potsherds were found in the excavations at *Arikkamedu and Alagankulam.* In particular, the discovery of antiquities in Alagankulam revealed the existence of Roman trade centre in the east coast.

Other important artefacts that prove the contact between India and the rest of Asia are tiny glass beads of dark blue, dull red and a few other colours found in huge numbers at Arikkamedu. These beads are similar to the beads found in Thailand and in Korea where 10,000 of them were found in the tomb of a king who died in 523 CE. Similar beads were also found all along the coast of East Africa, South East Asia, in the Philippines, Indonesian islands and in Japan. Hence to some extent we can assume that these might have been manufactured at Arikkamedu and exported to other places.

The excavation at *Korkai* had brought to light a few pieces of Northern Black Polished ware datable to 3rd - 4th century BCE for the first time. At Vasavasamudram a neck portion with handles on either side of an amphora of Mediterranean origin was another important find form excavation. At Kodumanal the unearthed antiquities from both deposits of habitation and burial sites yielded good number of inscribed potsherds, carnelian beads, and spindle whorls confirms the existence of bead making industry and weaving industry. Kanchipuram excavation proves the fact that the early punch marked coins and other coins were cast by terracotta moulds.

The structural activities of the ancient people and their engineering skill proved that they were masters in construction of water reservoir and wharf and the basement of Buddha Vihara. Uraiyur, Tirukkampuliyur and Alagarai excavations yielded number of inscribed potsherds which has revealed the widespread knowledge of writing among all classes of people.

**Medieval :** Formation of cities/Urbanization happened primarily in the Gangetic plains when the Mahajanapadas rose into prominence. This was followed later in other regions i.e. in the Deccan and South India. The formation of cities was not only due to trade activities but also the emergence of strong political powers and spread of religions. Thus Jainism and Buddhism exerted their influence in this process

The development of urban centres did not occur overnight; the emergence of

cities, their growth, and trade flourished and continued till the 5th-6th century and beyond the first millennium CE. The temple cities, like Thanjavur, Srirangam, Kanchipuram, Madurai continued to exist as the urban centres.

a. The study of the urban cities can be classified as (i) Power centres (fortified cities viz) Thanjavur, Gangaikondacholapuram, Uraiyur, Vallam and Palayarai, Sendamangalam, Panchalankuruchi etc., (ii) Trade and economic centres with high consumer potential (iii) port cities like Kaveripattinam, Arikkamedu, Alagankulam, Korkai and Vasavasamudram, etc., as well as (iv) towns showing trends of urbanism– Sengamedu, Andipatti, Maligaimedu, Perur and (v) Cultural and religious centres Thanjavur, Mammallapuram and Kanchipuram. To locate and study hinterland towns with prominent regional city centres was made possible due to the excavations carried out in these areas. The study of Arikkamedu, an entry port on the eastern coast, revealed that besides it being an Indo-Roman trading centre it was also a pivot for regional exchange system. This aspect came to light during the study of excavated antiquities from Sengamedu and Maligaimedu, and they show the development of these towns with urban trends.

**Modern :** For the study of modern period there are number of written records, such as Chronicles, Annals and Official records of British, French, Portuguese, Dutch, Danish and others who came to India for Trade and occupied our territory. The excavations carried out at Gingee, Tranquebar (Taragampadi) and Panchalankurichi revealed the structural activity and help us to understand the plan of the Citadel, Fortification wall etc. The recovered antiquities like Chinese Porcelain pot sherds, glass bottles, stone ball cannons and other objects throw light on the warfare activities and day-to-day life of that period.

**Chronology:** The chronology of the sites may be fixed by studying the artefacts and analyzing them with scientific methods. The Iron Age is dated to earlier than 5th century BCE in Tamil Nadu. The dating is now revised due to the adaptation of Carbon 14, Optically Stimulated Luminescence (OSL) and other dating methods. *For Korkai* (Tuticorin dt) the C-14 dating available in 805 + 95 BCE and *Paiyampalli* (Vellore) 640 + 105 BCE. These two dates suggest that Tamil Nadu was in the grip

of Iron Age during the beginning of the 1st millennium BCE. Red ware as well as black and red ware potteries excavated from different levels of the Urn Burial Sites at Adichanallur in Tamil Nadu have been subjected to OSL dating by the well-known Single Aliquot Regenerative dose (SAR) protocol. The OSL ages of the potteries are found to lie in the range 3600 – 6000 years B.P. (Before Present) Pottery is the most common type of artefact found at archaeological sites containing obvious information of its age if viewed through the windows of luminescence dating. In that sense this study which testifies that the ancient human settlement at the river bank of the Tamaraparani dating bank to Bronze age civilization provides a totally new application of luminescence dating in providing vital information on the early civilization that flourished in South India. *Kanchipuram* 480 BCE, [Kanchipuram district], *Appukkallu* 300 BCE, [Vellore district], *Kaveripoompattinam* 316+103 BCE, [Nagappattinam district] Poompuhar 316 + 105 BCE, and Alagankulam 2260 + 100 suggest not earlier than 5th century BCE for the Iron age culture in Tamil Nadu. Scientific study was undertaken to establish the geomagnetic field intensity value and to determine the age of the samples. The artefacts found in the excavation at Maligaimedu, Alagankulam and Teriruveli were subjected to magnetic studies. According to this, the samples from Maligaimedu belonged to 500 CE to 600 CE, and that of Terirruveli dated to 300 BCE. The Alagankulam potteries reflected the technological development in different firing atmospheres and colouration of artisans during the period 3rd century. Thus the tentative chronology fixed by assessing the antiquities was scientifically proved by analyzing pottery and brick samples collected from the trenches.

# V. Cultural Heritage of Tamil Nadu

**Pre-Historic period**

Palaeolitic man initially lived in the natural caverns as seen in Gudiyam cave near Poondi. In Neolithic period he moved to the foot hills by digging pits for the dwellings and having thatched roofs over them. He used crude stone tools in Palaeolithic age, small sized tools in Microlithic period, and polished stone tools in Neolithic period. When they began to live in a settled life, manufactured hand made pottery and they knew the art of cooking. In the megalithic period they used wheel turned fine variety of pottery for their daily usage. The major occupation of these periods were hunting, farming, fishing and rearing of the animals.

The disposal of dead was widely practiced in this period. This had been revealed from the availability of different kind of burials like Urns, Cairn circle, Dolmenoid cist, Sarcophagus etc. They also used big sized pots in various shapes even the shape of the animal [sarcophagus] for burying the dead. The people of this period believed in life after death and they worshipped their ancestors. The worship of mother goddesses also seems to have gained importance during this period as evidenced from Modur and Adichanallur excavations. The iron implements found in the excavations of almost all megalithic sites, revealed the fact that they knew the art of iron smelting and making metal objects. Bead making and weaving industries also existed in this period.

**Historic Period**

**Building Activities :** The early historic and the medieval period show the massive development in building activities. Big sized baked bricks were used for constructing houses as revealed from excavations at Korkai, Karur, Poompuhar etc. The flooring was laid by mixing lime with rubbles of the available materials like lime shell [Alagankulam]. Ring wells were provided for drinking water. In medieval period secular buildings like palaces were constructed with baked bricks as revealed from Gangaikondacholapuram excavations. The roof was covered with flat tiles and fixed in frames with the help of iron nails and clamps. The

superstructures were supported by wooden pillars. Four types of channels were noticed in the Padaivedu excavation. They were used for bringing water from the nearby river and draining the sewage water.

The food habits of the people of Tamil Nadu are known from the excavated antiquities of various sites. They took both vegetarian and non-vegetarian food. This has been revealed from the occurrence of food grains and animal bones in the excavations. Earthen vessels were used for storing and cooking the food.

The excavated antiquities such as terracotta ear ornaments, beads and armlets, shell bangle pieces, semiprecious stone beads reveals that the people adorned themselves with ornaments. In the medieval period they began to use glass bangles with decoration, copper and gold ornaments.

**Commercial Activities :** Korkai was the centre for making shell bangles and pearl fishery. Recent findings of large number of Roman potteries and coins from Karur, Alagankulam, Arikkamedu revealed the foreign trade. The finding of Northern Black Polished (NBP) sherds from Korkai and Alagankulam proves the trade contact with Gangetic plain.

**Social Condition :** The occurrence of large number of graffiti marked and inscribed potsherds in the excavated sites exposed the fact that the people knew the art of writing. The different types of hip-hops were collected from the excavations might have been used as a playing object by the children.

The other popular play appears to be gambling using dice. As far as Tamil Nadu is concerned this play seems to be played from very early period i.e. from 4$^{th}$ Century BCE [Alagankulam]. Chess was another indoor game played by this people. For this play they used gamesman made up of terracotta and bone. This type of chess terracotta gamesmen were found in the excavations at Tirukampuliyur, Andipatti and Perur.

In the early historical period Buddhism had its foot hold in Tamil Nadu. Excavations revealed the basement of the Vihara and Stupas at Kanchipuram and

the Vihara at Poompuhar. The devotees seem to have worshipped Buddhapada and miniature Buddha images here.

The worship of Hindu Gods had become prominent during 4th-5th centuries. The excavations undertaken at Alagarai and Tirukkampuliyur had revealed the fact that Ganapati with his *vahana* mouse was also worshiped. The huge terracotta bull found in the excavation at Andipatti might have been used for votive purpose.

Sendamangalam excavation has brought to light that Vishnu as crawling Krishna was in great veneration among the Vaishnavites. Worship of Shiva as Phallus by the Saivites is known from the discovery of Phalluses during exploration held at Padaivedu.

## VI. Recommendations for further Research

The above overview of Tamil Nadu's archaeology as gleaned from excavations gives us an accurate picture of the sites of archaeological excavations in Tamil Nadu. It has several strengths; it also has numerous lacunae which need to be plugged. Some of these weaknesses are:

1. A vast majority of the 132 excavations have been carried out in sites which represent the Iron Age or the Megalithic period to the exclusion of other important periods such as Palaeolithic, Neolithic, Medieval and Modern times. This gives us a skewed picture of Tamil Nadu's history with a plethora of information relating to the Iron Age. Greater efforts must be taken to study the sites belonging to other ages as well.

2. Most of the excavations are undertaken in a vertical fashion with emphasis on cultural sequence and collection of artefacts. At the same time, horizontal excavation is not given the attention it deserves. There may be many reasons for it; constraints of time and resources being important ones. However, for a better understanding of the historicity of a site, more number of horizontal excavations must be pursued.

3. The facilities for carrying out tests on the excavated objects are woefully inadequate. Modern laboratory tests such as C-14, OSL dating, Analysis of pollen grains, bone parts etc. can be done only in select Institutions after expending considerable money and time. It is important for archaeology that there are more number of well equipped chemical, physical and geological laboratories which can give accurate results on dating and the nature of substance recovered.

4. Lack of adequate funding support is another weakness often found under Indian conditions for carrying out excavations satisfactorily.

5. Though a number of excavations totalling 132 or more have been conducted in Tamil Nadu, the materials unearthed have not been properly studied for writing the archaeological history of the State. The main reason here is lethargy in the

shape of poor documentation; of the many excavations done less then half are available for study in published form. Thankfully in recent years, the pace of documentation has improved; the State Department of Archaeology has published 25 reports in the last few years. It is hoped that other agencies will adhere to the discipline of recording their findings and make it available to discerning students of archaeology.

**Some recommendations for future researches**

- There is an urgent need to rescue archaeological sites form different kinds of threats such as vandalism, theft of objects etc. and to safeguard them from any kind of destruction in the immediate future. For this purpose, a national Heritage Act is absolutely necessary.

- Properly controlled scientific excavations using the whole range of modern material, theoretical and technological tools is a vital necessity.

- Greater emphasis should be placed on investigating the internal dynamics of late pre-historic societies in South India, particularly the Neolithic settlers by exploring evidence for economic, social and ritual practices.

- Investigations and excavation must be broad-based so as to cover a wide variety of sites. River basins afford an excellent opportunity to study capital cities of empires, emergence of urbanization, and trade links with foreign countries. Some of the potential river basin sites that can be taken up for exploration/excavation are

  a. Palar basin (Kanchipuram, Mamallapuram and Vasavasamudram)

  b. Kaveri and its tributaries (Uraiyur, Poompuhar, Karur and Kodumanal, Vallam, Tirukampuliyur, Alagarai and Palayarai)

  c. Ariyankuppam river (Arikkamedu)

  d. Manimukta river (Sengamedu)

  e. Vaigai basin (Madurai and Alagankulam)

f. Tamraparani (Korkai)

g. Noyyal (Perur, Boluvampatti)

h. Deviyaru (Mangudi)

i. Paravanaru (Kudikadu)

j. Gadilam (Sendamangalam)

k. Tenpennai (Tirukkoilur)

l. Pampaiyaru (Tiruvamattur)

- Further investigations, fresh explorations must be undertaken to have a better understanding of the Pre-Iron Age phase and also its links with the Bronze Age culture of North India or Harappa.
- One of the steps is to encourage a multi-disciplinary, integrated approach to the study of Pre-historic South India especially the Neolithic period.
- We must collaborate with other teams working in South India in order to develop a systematic ceramics chronology that can be used by all projects working in the region.
- It is important to train students in archaeological field methods.
- Documentation of field work is a very important aspect of archaeology. By publishing results of excavations as monographs, we can ensure that the knowledge gained in one site can be disseminated widely. This will ensure improved performance in future digs.
- Holding regular workshops and conferences to present and discuss research findings is another important area which has not received due attention. This must be encouraged so that field archaeologists develop skills of presentation and gain confidence to face large audiences of their peer group.
- The study of differences and evolving patterns of ideas of these civilizations benefits the future generations by setting examples, distinguishes between good and bad, and makes an impact on history forever.

## VII. Conclusion

Globalization is the talk of the day and this has also been reflected in the phenomenon for understanding the past and the present day study of archaeology and history. With this process, the world is getting smaller i.e., a global village with its systemic properties. The study of globalization and of the global system constitutes a potential revolution in the social sciences. It also involves inter connections across boundaries and the dissolving of some other boundaries. The basic essence of globalization is the convergence of all the countries into a single unit, whether economically or politically. It is through this homogenous identity that all countries can be united and the boundaries can be also erased.

Thanks to the archaeological excavations, it has brought out the ruins of Pompeii buried by volcanic eruption and preserved the ancient towns like Harappa almost perfectly. Excavations were even able to find carbonized loaves of bread in a bakery offering an unprecedented window into the daily life of an ancient Roman city in CE 70. Similarly, unique and rare antiquities were found in Tamil Nadu which revealed the continuous occupation of the sites till today. All local differentiation and regional variations are reflected in the materials unearthed; this is due to the cultural exchange and intercultural borrowings. To a large extent, excavations carried out in Tamil Nadu have revealed the unknown history of Tamil Nadu and has thrown open the various cultural activities of our ancestors for further study and research.

The archaeology of Tamil Nadu is not a static thing but a dynamic movement. It is forever evolving with the passage of time and with the revelation of new discoveries. Every fresh exploration or excavation -though it takes off from previous efforts - contributes significantly to an understanding of the past by unfolding new vistas and unraveling fresh mysteries of our glorious past. The author with his fervent hope feels that this book will spur action towards undertaking more excavations in hitherto uncovered areas such as Neolithic/Chalcolithic culture, Kalabhras period etc., and throw fresh light on topics left untouched or not fully explored. By this approach, we can hope to gain better insight into the dark alleys and narrow by lanes of Tamil Nadu archaeology.

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## ABOUT THE AUTHOR

Dr. T.S.Sridhar, IAS, (born 1955) is a Senior Officer of the Indian Administrative Service. He has obtained his post-graduate degree from Madras Christian College, Chennai and entered Government service with British history and European history as the main subjects. He has been awarded Doctoral degree in "Resettlement and Rehabilitation - A Policy Frame Work" by the University of Madras (2008). He has held many positions including Secretary to Government in Highways, Agricultural Department, Personnel Administrative Reforms Department, Chairman of Tamil Nadu Electricity Board and Vice-Chairman of Science City. In the capacity of Special Commissioner of Archaeology, (18.06.2004) he took keen interest in the field of archaeology, initiated excavations at Andipatti, Modur, Parikulam and Marakkanam The excavation reports in respect of 11 sites were published as "Excavations of Archaeological Sites in Tamil Nadu (1969-1995)" 2004, and the excavation reports of Alagankulam, Andipatti and Modur were a so brought out in qu ck time. An unique publication on "Rock art of Tamil Nadu" has also been published by him along with others He has participated in several International and National Seminars and presented papers on various subjects in Archaeology

During his stewardship of the Department of Archaeology an intensive campaign of epigraphy has been launched in the year 2004; with the intention of completing the documentation of all the Tamil Inscr ption a polished Neolithic Stone hand axe with 4 Indus Signs was discovered from Sembianyan kandiyur at Nagappattinam district, which has been considered as "the most important discovery of this century" by eminent scholars In view of this, an international symposium on Indus Culture and Tami. Language was organised at Chennai by Tamil Nadu State Department of Archaeology in February 2007. It was well attended by scho ars & experts in the f eld of Tam l Language and Indus Signs and Symbols. He is now the Principal Secretary and Commissioner of Archaeology and Museums, Government of Tamil Nadu

## APPENDIX I

### Archaeology of Tamil Nadu

### Excavated sites: Palaeolithic to Iron age - Part I

| S.N. | Site | District | River basin | Port town | Capital cities | Trading Centre | Sangam town | Nature of the site |
|---|---|---|---|---|---|---|---|---|
| 1 | Attirampakkam | Tiruvallur | Kortallayar | | | | | Palaeolithic |
| 2 | Gudiyam Cave | Tiruvallur | | | | | | Palaeolithic |
| 3 | Neyveli | Tiruvallur | Kotrallayar | | | | | Palaeolithic |
| 4 | Poondi | Tiruvallur | Kotrallayar | | | | | Palaeolithic |
| 5 | Vadamadurai | Tiruvallur | Araniyar | | | | | Palaeolithic |
| 6 | Parikkulam | Tiruvallur | | | | | | Palaeolithic |
| 7 | Tiruttanga | Virudunagar | | | | | | Mesolithic |
| 8 | T Kaluppatti | Madurai | | | | | | Mesolithic |
| 9 | Theriruveli | Ramanathapuram | | | | | | Mesolithic |
| 10 | Myaladumparai | Dharmapuri | | | | | | Mesolithic |
| 11 | Paiyampalli | Vellore | | | | | | Neolithic |
| 12 | Appukallu | Vellore | | | | | | Neolithic |
| 13 | Malappadi | Dharmapuri | | | | | | Neolithic |
| 14 | Modur | Dharmapuri | | | | | | Neolithic<br>Megalithic |
| 15 | Kallerimalai | Vellore | | | | | | Iron age |
| 16 | Malayampattu | Vellore | | | | | | Iron age |
| 17 | Kambarmedu | Nagapattinam | | | | | | Iron age |
| 18 | Amirthamangalam | Tiruvallur | | | | | | Iron age |
| 19 | Aeroville | Pondicherry | | | | | | Iron age |
| 20 | Anaimalai | Coimbatore | | | | | | Iron age |

| S.N. | Site | District | River basin | Port town | Capital cities | Trading Centre | Sangam town | Nature of the site |
|---|---|---|---|---|---|---|---|---|
| 21 | Kovalan poattal | Madurai | Vaiga | | | | | Iron age |
| 22 | Sanur | Kanchipuram | | | | | | Iron age |
| 23 | Sittannavesal | Pudukkottai | | | | | | Iron age |
| 24 | Tiruvakkara | Villuppuram | | | | | | Iron age |
| 25 | Mottur | Thiruvennamallai | | | | | | Iron age |
| 26 | Adichanallur | Thuthukudi | Thamiravarani | | | | | Iron age |
| 27 | Kunnattur | Kanchipuram | | | | | | Iron age |
| 28 | Sirucheri | Kanchipuram | | | | | | Iron age |
| 29 | Nedunkur | Karur | | | | | | Iron age |
| 30 | Kodumanal | Erode | Noyyal | | | | | Iron age & Early Historic |
| 31 | Semb yan Kandiyur | Nagapattinam | | | | | | Iron age |
| 32 | Porunthal | Dindugal | | | | | | Iron age |
| 33 | Thandikudi | Dindugal | | | | | | Iron age |

## APPENDIX II

### Archaeology of Tamil Nadu

### Excavated sites: (Early Historic) Sangam age to Medieval period - Part II

| S.N. | Sites | District | River basin | Port town | Capital cities | Trading Centre | Sangam town | Nature of the site |
|---|---|---|---|---|---|---|---|---|
| 1 | Perur | Coimbatore | Noyyal | - | - | Bead making industry and located on the ancient highway to Chera Nadu | - | Early historic |
| 2 | Maligaimedu | Cuddalore | - | - | - | Sangam trading center | - | Early historic and Medieval |
| 3 | Mangudi | Tirunelveli | Deviyaru | - | - | - | Referred in Sangam literature | Early historic and Iron |
| 4 | Andipatti | Tiruvannamalai | - | - | - | Sangam trading center | | - |
| 5 | Kaver poompattinam | Nagapattinam | Kaveri | Chola port town (Sangam) | Sangam | Sangam | Chola city | Early historic |
| 6 | Korkai | Thuthukudi | Tamiraparani | Pandya port | Sangam Pandyas | Sangam | Sangam city | Early historic |
| 7 | Adiyamankottai | Dharmapuri | - | - | Adiya Kings Sangam age | Sangam | Sangam city | Early historic and Medieval |
| 8 | Arikamedu | Pondicherry | Ariyankuppam river | 'Veerai' sangam port | - | Roman Settlement | Sangam city | Early historic |
| 9 | Alagarai | Karur | Kaveri | - | - | Sangam | - | Early historic and Medieval |
| 10 | Alagankulam | Ramanathapuram | Vaigai | Saliyur-port town of Sangam Pandyas | - | Roman Settlement | Sangam town | Early historic and Medieval |
| 11 | Uraiyur | Trichy | Kaveri | - | Cholas | Sangam | Sangam town | Early historic |
| 12 | Karur | Karur | Amaravath | Vanchi of Sangam Pandyas | Cheras kings | Roman Settlement | Sangam town | Early historic |

| S.N. | Sites | District | River basin | Port town | Capital cities | Trading Centre | Sangam town | Nature of the site |
|---|---|---|---|---|---|---|---|---|
| 13 | Kanchipuram | Kanchipuram | Vegavti a tributary of Palar | - | Thonda man and Pallavas | Sangam | Sangam town | Early h storic |
| 14 | Karaikadu | Cuddalore | - | - | - | - | - | Early historic |
| 15 | Kuttur | Dharmapuri | - | - | - | Terracoota beads | - | Early historic |
| 16 | Kud kadu | Cuddalore | Paravanaru | Sangam | - | Shell bangles and beads | - | Early historic |
| 17 | Sengamedu | Cuddalore | Man mutharu | - | - | - | - | Early historic |
| 18 | Tirukampu iyur | Karur | Kaveri | Sangam | - | Terracottas | - | Early historic |
| 19 | Boluvampatti | Co mbatore | Noyyal | Sangam | - | Terracottas Beads, Texti e, Terracottas | - | Early historic and Medieval |
| 20 | Vallam | Thanjavur | Kaveri | - | Cholas | - | Sangam | Early historic and Medieval |
| 21 | Vasavasamudram | Kanchipuram | Palar | Sangam(Roman) (Amphorae) | - | Roman | | Early h storic |
| | Buddha Akaram | Kanchipuram | Palar | | | | | Early historic |
| | Mangu am | Madura | | | | | Sangam | Early historic |
| 22 | Sendamangalam | Vil upuram | Gade am | - | Koperunsingan | - | - | Early historic and Medieval |
| 23 | Tirukko lur | Vi lupuram | Then Pennai | - | Malaiyaman | - | Sangam | Early historic and Medieval |
| 24 | Th ruvamattur | Vil upuram | Pampaiyaru | - | - | - | - | Early historic |
| 25 | Mamallapuram | Kanchipuram | - | Pa lavas | - | Pallavas | - | Early historic and Medieval |
| 26 | Pa ayarai | Thanjavur | Thirumalai Rajan river | - | Later Cho as | - | - | Medieval |

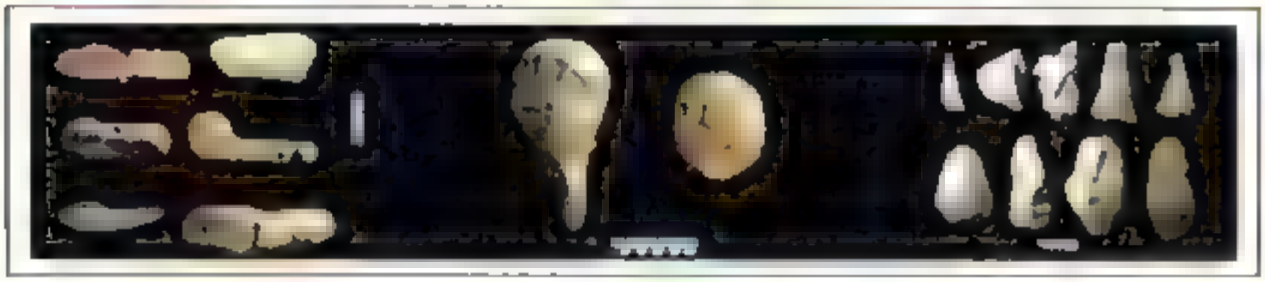
| S.N. | Sites | District | River basin | Port town | Capital cities | Trading Centre | Sangam town | Nature of the site |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| 27 | Ganga konda Cholapuram | Ariyalur | - | - | Rajendra Cholan | - | - | Medieval |
| 28 | Ukkramkottai | Tirunelveli | - | - | Early Pandyas | - | - | Medieval |
| 29 | Darasuram | Thanjavur | Arasalaru | - | Later Cholas | - | - | Medieval |
| 30 | Kurumbanmedu | Thanjavur | - | - | Cholas | - | | Medieval |
| 31 | Periapattinam | Ramanathapuram | - | Early Pandyas | - | Early Pandyas | - | Medieval |
| 32 | Kannanur | Trichy | Kollidam | - | Hoysala capital city | - | | Medieva |
| 33 | Padaivedu | Vellore | Kamandala Naga river | - | Sambuvaraya capital city | - | - | Medieval |
| 34 | Senji | Villupuram | Sangarabarani | - | Capital of Senji Nayaka & Raja Desingu | - | - | Medieval |
| 35 | Panchala kurichi | Tirunelveli | - | - | Capital of Virapandiya kattabom | - | - | Medieva |
| 36 | Marakkanam | Villupuram | | | | | | Medieval |
| 37 | Mesilthamur | Villupuram | | | | | | Medieval |
| 38 | Tranquebar | Nagappattinam | | | | | | Modern |
| | | | | | | | | |

*Colour plate - I*

## PALAEOLITHIC PERIOD

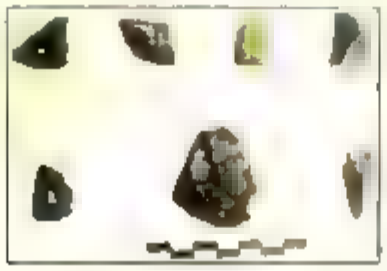
Gudyiam

Parikulam

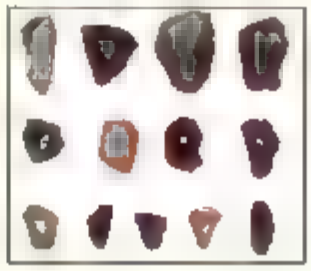


Parikulam

## MICROLITHIC PERIOD

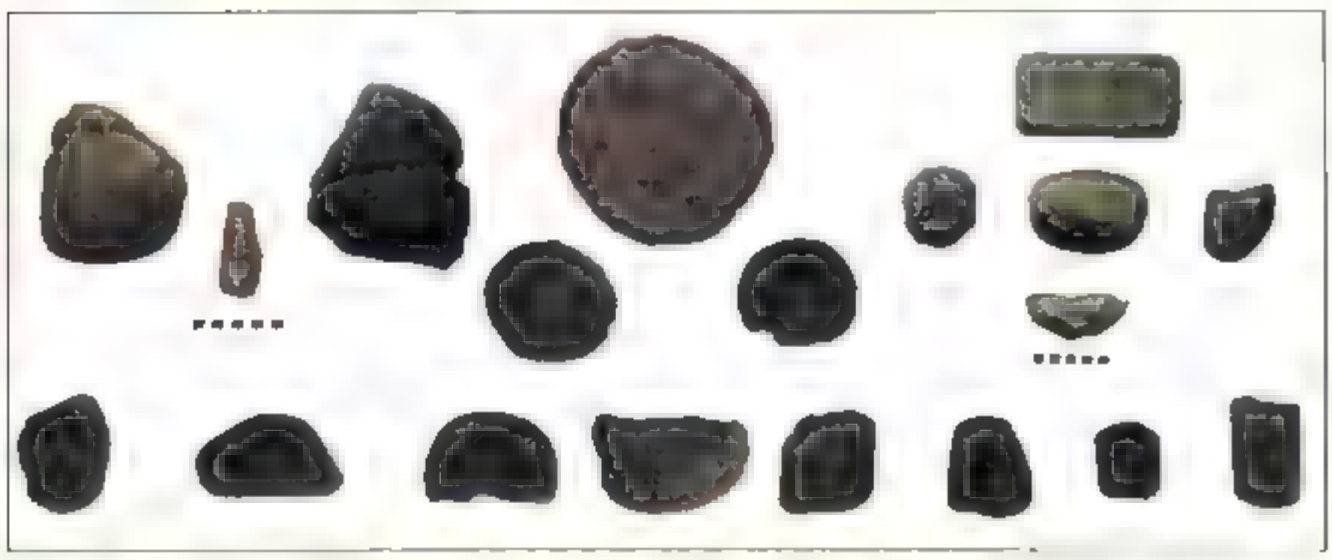


Thiruthangal



Mangudi

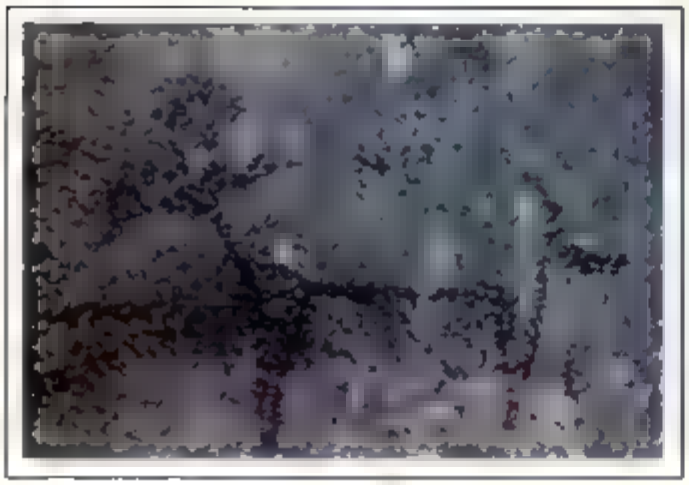
## NEOLITHIC PERIOD



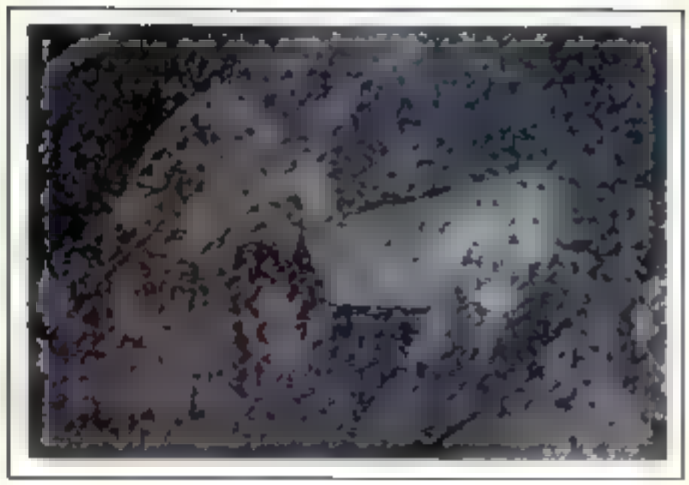
Modur

*Colour plate - ii*

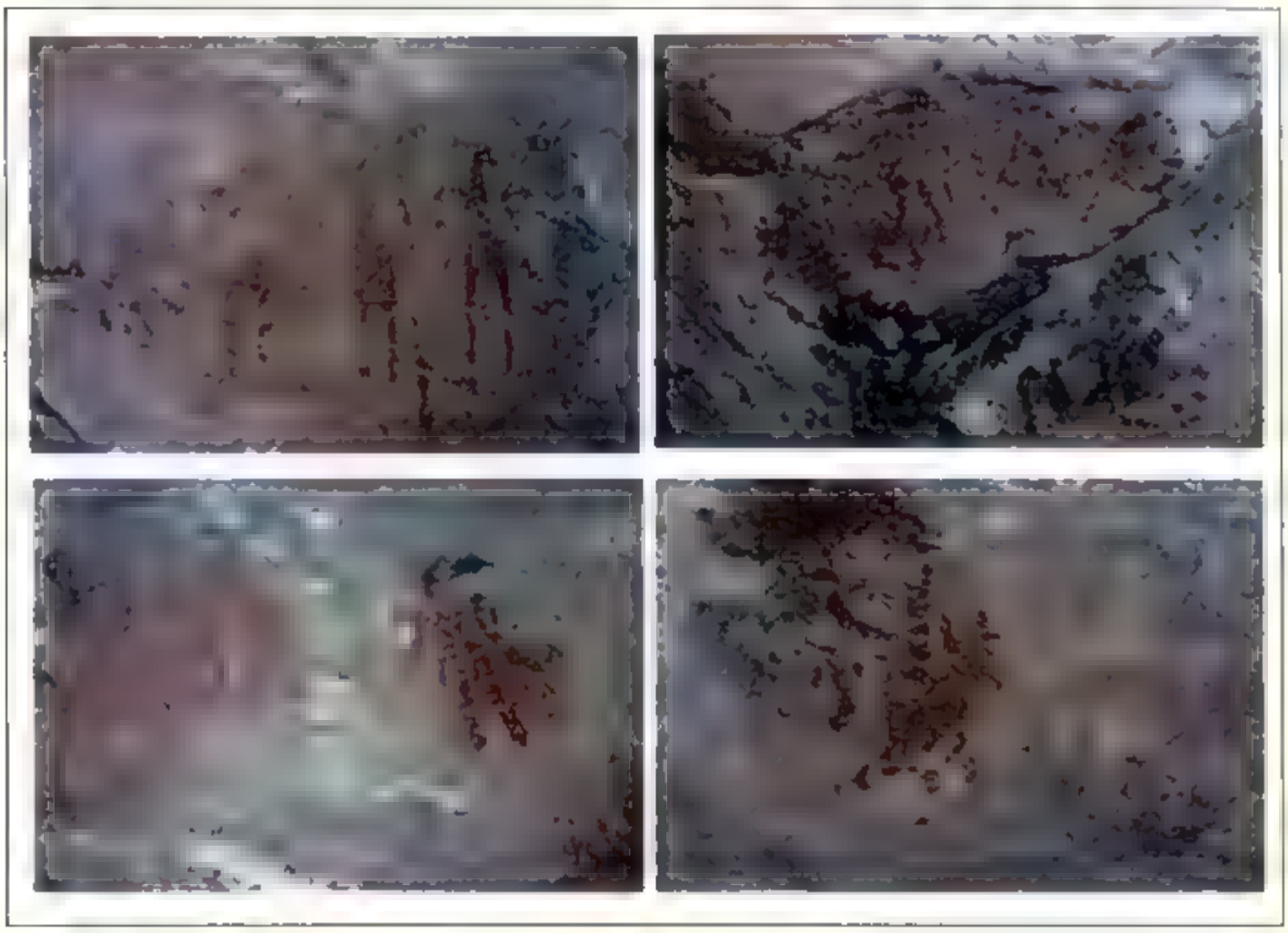
## ROCK ART



Nayanur



Settavarai



Kilvalai

# EXCAVATED TRENCHES & ANTIQUITIES - IRON AGE

Nedunkur

Sembiankandiyur

Kodumanal

Nallampatti

# EXCAVATED TRENCHES & ANTIQUITIES - IRON AGE

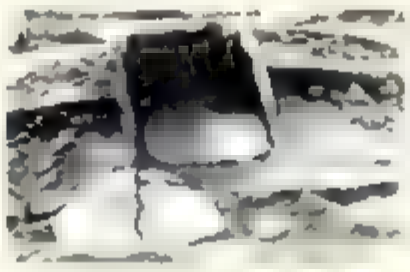
Adıchchanallur

Kovalanpottal

Adichchanallur

Dolmen - Mallachandram

Udayanatham



Anamalai

Mottur

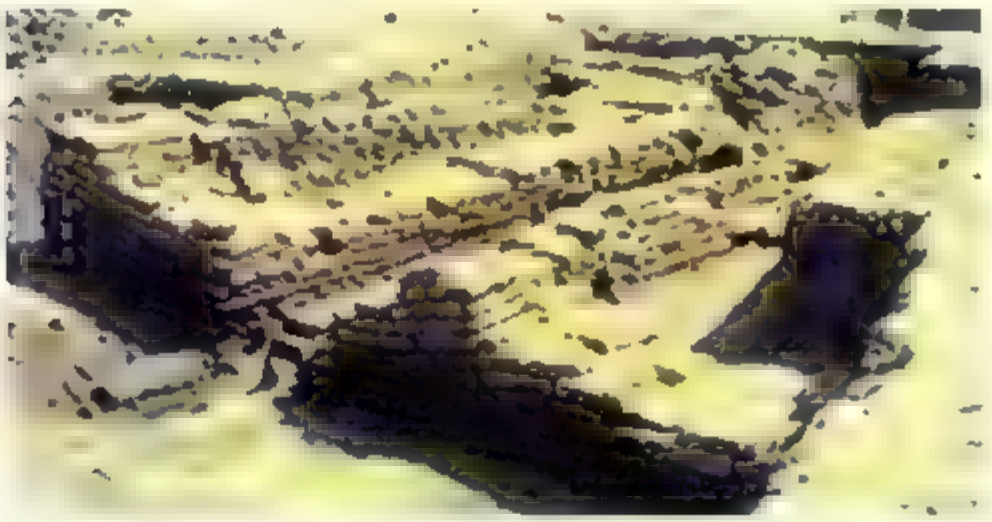
*Colour plate - v*

## EXCAVATED TRENCHES - EARLY HISTORIC PERIOD

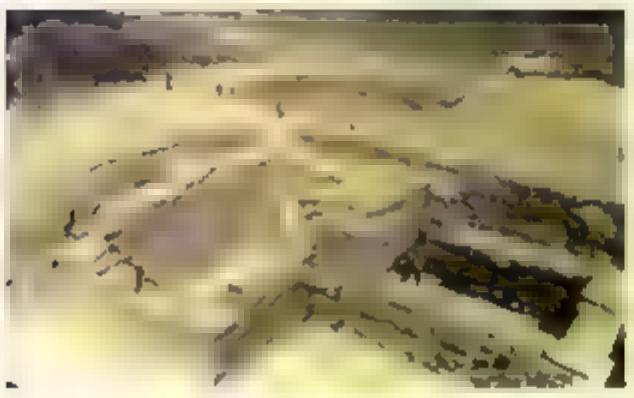
Karur

Mamallapuram

Tirukovilur



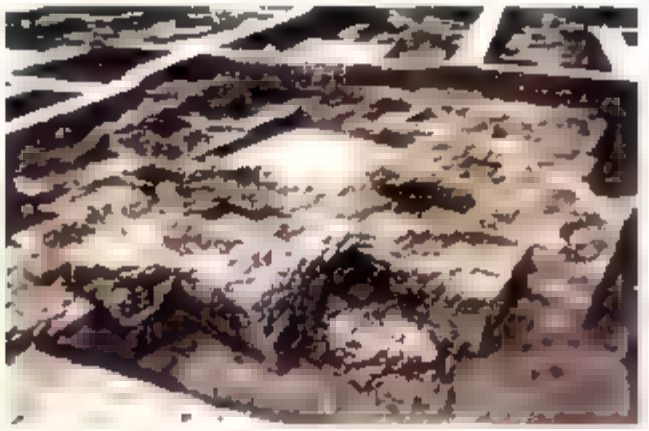
Poompuhar



Arikamedu

Tirukampuliyur

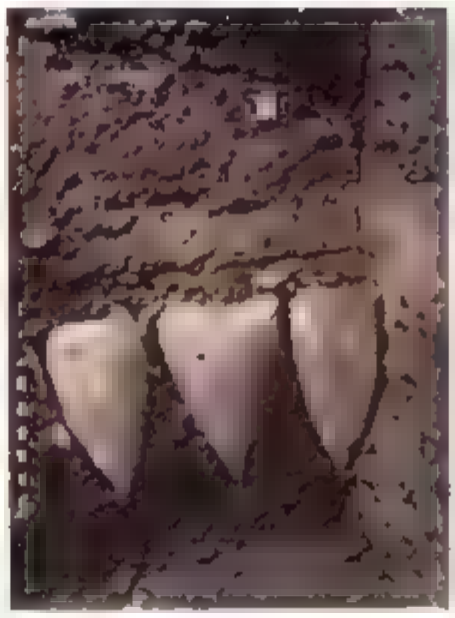
# EXCAVATED TRENCHES - EARLY HISTORIC PERIOD



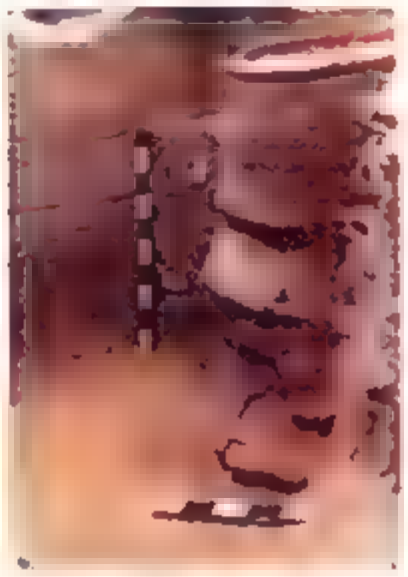
Poompuhar

Mangudi

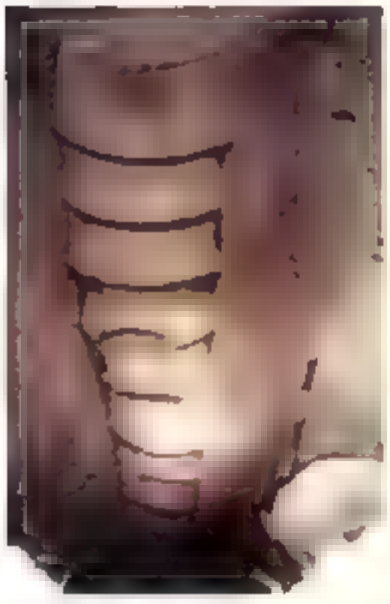
## SOAKAGE JAR & RING WELL



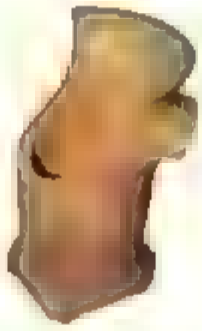
Kanchipuram



Malıgaimedu



Vasavasamudram



Amphorae - Vasavasamudram

Korkai

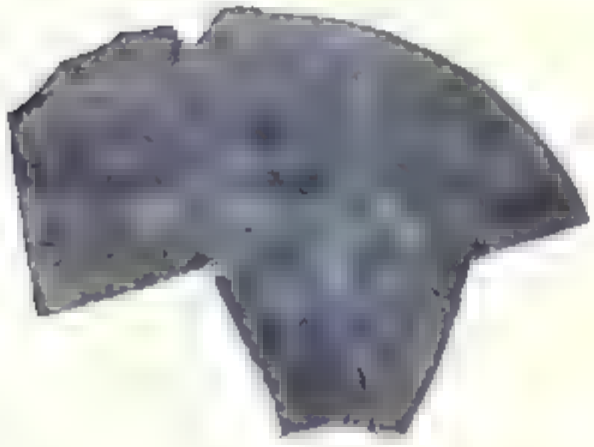
*Colour plate - vii*

## ANTIQUITIES - EARLY HISTORIC PERIOD

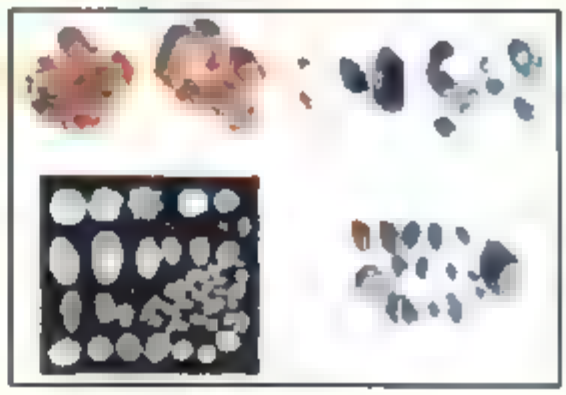
Stamped Potsherd Alagankulam

Engraved Potsherd Malıgaimedu

Pandya coın Alagankulam



Rouleted Sherd - Arikamedu



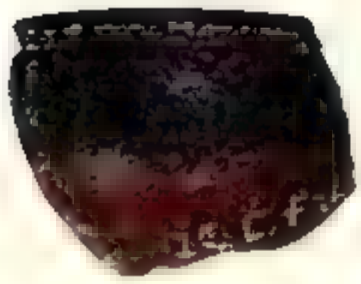
Beads Alagankulam

Sherd with Arabic Writing
Alagankulam

Graffiti Potsherd Kambarmedu

# INSCRIBED POTSHERDS - EARLY HISTORIC PERIOD

Mangudi



Teriruveli

Alagankulam

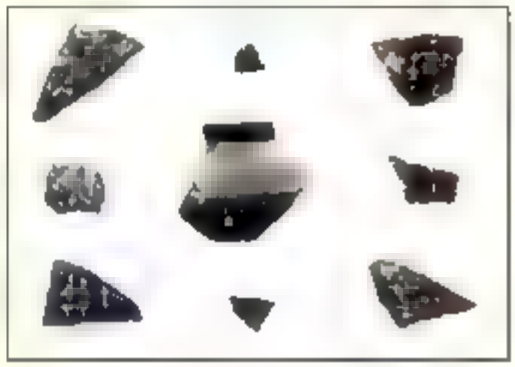
Alagankulam

Poompuhar

Uraiyur

Andipatti

Korkai



Karur

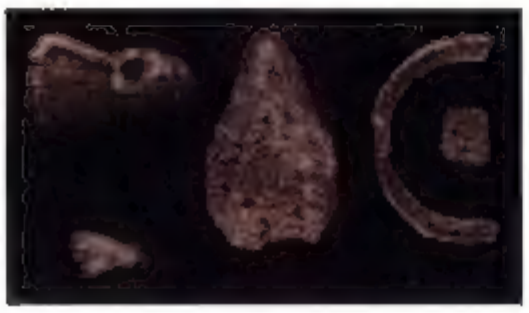
*Colour plate - ix*

## TERRACOTTAS - EARLY HISTORIC PERIOD

Panayakulam

Uraiyur

Kanchipuram



Tirukovilur

Andipatti

Modur

Andipatti

Appukkallu

Kurumbanmedu

Paiyampalli

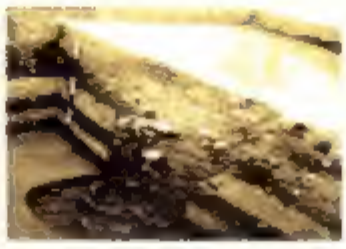
*Colour plate - x*

## TRENCHES - MEDIEVAL

Padavedu

Samayapuram

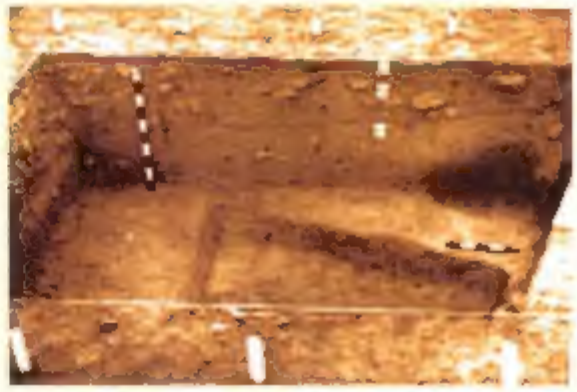
Sendamangalam



Kambarmedu

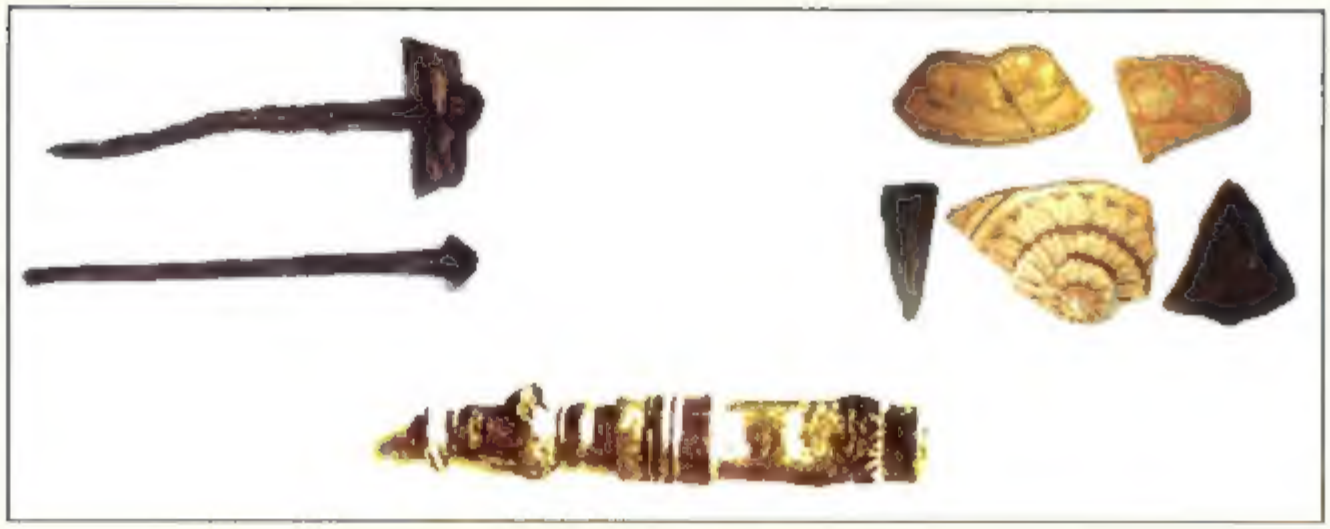
Gangaikondacholapuram

Mahabalipuram



Palayarai

## ANTIQUITIES - MEDIEVAL

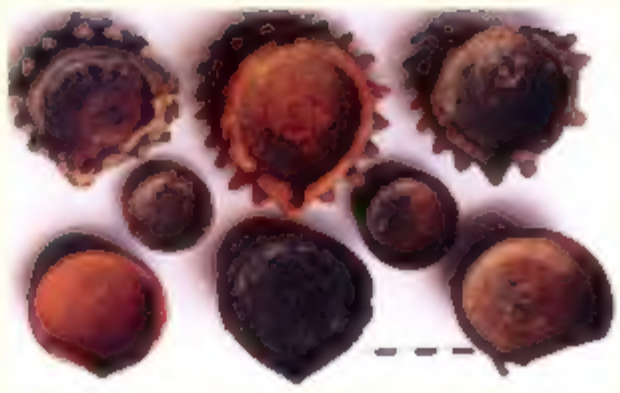


Gangaikondacholapuram

Perur

Palayarai

Palayarai



Perur